

SEQUENCE LISTING

<110> Homa, Fred
Wathen, Michael
Hopkins, Todd
Thomsen, Darrell

<120> A Method for Treating Herpes Virus

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<170> PatentIn version 3.0

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 Ala Asp Arg Asp Tyr Leu Glu Ile Glu Val Gly Gly Arg Arg Leu Phe
 755 760 765
 Phe Val Lys Ala His Val Arg Glu Ser Leu Leu Ser Ile Leu Leu Arg
 770 775 780
 Asp Trp Leu Ala Met Arg Lys Gln Ile Arg Ser Arg Ile Pro Gln Ser
 785 790 795 800
 Pro Pro Glu Glu Ala Val Leu Leu Asp Lys Gln Gln Ala Ala Ile Lys
 805 810 815

Val Val Cys Asn Ser Val Tyr Gly Phe Thr Gly Ala Gln His Gly Leu
 820 825 830
 Leu Pro Cys Leu His Val Ala Ala Thr Val Thr Thr Ile Gly Arg Glu
 835 840 845
 Met Leu Leu Ala Thr Arg Ala Tyr Val His Ala Arg Trp Ala Glu Phe
 850 855 860
 Asp Gln Leu Leu Ala Asp Phe Pro Glu Ala Ala Gly Met Arg Ala Pro
 865 870 875 880
 Gly Pro Tyr Ser Met Arg Ile Ile Tyr Gly Asp Thr Asp Ser Ile Phe
 885 890 895
 Val Leu Cys Arg Gly Leu Thr Ala Ala Gly Leu Val Ala Met Gly Asp
 900 905 910
 Lys Met Ala Ser His Ile Ser Arg Ala Leu Phe Leu Pro Pro Ile Lys
 915 920 925
 Leu Glu Cys Glu Lys Thr Phe Thr Lys Leu Leu Ile Ala Lys Lys
 930 935 940
 Lys Tyr Ile Gly Val Ile Cys Gly Gly Lys Met Leu Ile Lys Gly Val
 945 950 955 960
 Asp Leu Val Arg Lys Asn Asn Cys Ala Phe Ile Asn Arg Thr Ser Arg
 965 970 975
 Ala Leu Val Asp Leu Leu Phe Tyr Asp Asp Thr Val Ser Gly Ala Ala
 980 985 990
 Ala Ala Leu Ala Glu Arg Pro Ala Glu Glu Trp Leu Ala Arg Pro Leu
 995 1000 1005
 Pro Glu Gly Leu Gln Ala Phe Gly Ala Val Leu Val Asp Ala His
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 Arg Arg Ile Thr Asp Pro Glu Arg Asp Ile Gln Asp Phe Val Leu
 1025 1030 1035
 Thr Ala Glu Leu Ser Arg His Pro Arg Ala Tyr Thr Asn Lys Arg
 1040 1045 1050
 Leu Ala His Leu Thr Val Tyr Tyr Lys Leu Met Ala Arg Arg Ala
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 Gln Val Pro Ser Ile Lys Asp Arg Ile Pro Tyr Val Ile Val Ala
 1070 1075 1080
 Gln Thr Arg Glu Val Glu Glu Thr Val Ala Arg Leu Ala Ala Leu
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 Arg Glu Leu Asp Ala Ala Pro Gly Asp Glu Pro Ala Pro Pro
 1100 1105 1110
 Ala Ala Leu Pro Ser Pro Ala Lys Arg Pro Arg Glu Thr Pro Ser
 1115 1120 1125
 His Ala Asp Pro Pro Gly Gly Ala Ser Lys Pro Arg Lys Leu Leu

| | | |
|-----------------------------|---------------------|-------------|
| 1130 | 1135 | 1140 |
| Val Ser Glu Leu Ala Glu Asp | Pro Gly Tyr Ala Ile | Ala Arg Gly |
| 1145 | 1150 | 1155 |
| Val Pro Leu Asn Thr Asp Tyr | Tyr Phe Ser His Leu | Leu Gly Ala |
| 1160 | 1165 | 1170 |
| Ala Cys Val Thr Phe Lys Ala | Leu Phe Gly Asn Asn | Ala Lys Ile |
| 1175 | 1180 | 1185 |
| Thr Glu Ser Leu Leu Lys Arg | Phe Ile Pro Glu Thr | Trp His Pro |
| 1190 | 1195 | 1200 |
| Pro Asp Asp Val Ala Ala Arg | Leu Arg Ala Ala Gly | Phe Gly Pro |
| 1205 | 1210 | 1215 |
| Ala Gly Ala Gly Ala Thr Ala | Glu Glu Thr Arg Arg | Met Leu His |
| 1220 | 1225 | 1230 |
| Arg Ala Phe Asp Thr Leu Ala | | |
| 1235 | 1240 | |

<210> 5
 <211> 3708
 <212> DNA
 <213> herpes simplex

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| aggcaaaaact tttacaaccc ctacctcgcc ccagtcggga cgcaacagaa gccgaccggg | 240 |
| ccaaccacgc gccatacgta ctatagcgaa tgcgtatgaat ttcgattcat cgccccgcgg | 300 |
| gtgctggacg aggtgtacgt cgggggggac gagcgcgacg tccctccgcgt cgggtcgggc | 360 |
| cgcgcccca aggtgtactg cgggggggac gagcgcgacg tccctccgcgt cgggtcgggc | 420 |
| ggcttctggc cgccgcgcgc ggcgcgtgg ggcgcgtgg accacgcggc ggccgggttc | 480 |
| aaccccaccc tcaccgtctt tcacgtgtac gacatcctgg agaacgtgga gcacgcgtac | 540 |
| ggcatgcgcg cggcccagtt ccacgcgcgg tttatggacg ccatcacacc gacggggacc | 600 |
| gtcatcacgc tcctgggcct gactccggaa ggccaccggg tggccgttca cgtttacggc | 660 |
| acgcggcagt acttttacat gaacaaggag gaggttgaca ggcacctaca atgcgcgcgc | 720 |
| ccacgagatc tctgcgagcg catggccgcg gccctgcgcg agtccccggg cgcgtcggttc | 780 |
| cgcggcatct cgcggacca cttcgaggcg gaggtggtgg agcgcaccga cgtgtactac | 840 |
| tacgagacgc gccccgtct gtttaccgc gtctacgtcc gaagcggcgcg cgtgtgtcg | 900 |
| tacctgtgcg acaaacttctg cccggccatc aagaagtacg aggggtgggt cgacgcccacc | 960 |
| acccgggttca tcctggacaa ccccggttca gtcaccttcg gctggtaccg tctcaaaccg | 1020 |
| ggccggaaca acacgcttagc ccagccgcgg gccccgatgg cttcgggac atccagcgcac | |

| | | | | | | |
|-------------|-------------|--------------|------------|-------------|--------------|------|
| gtcgagttta | actgtacggc | ggacaacctg | gccatcgagg | ggggcatgag | cgacacctaccg | 1080 |
| gcataacaagc | tcatgtgctt | cgatatacgaa | tgcaaggcgg | ggggggagga | cgagctggcc | 1140 |
| tttccggtgg | ccgggcaccc | ggaggacctg | gttattcaga | tatcctgtct | gctctacgac | 1200 |
| ctgtccacca | ccgcccctgga | gcacgtcctc | ctgtttcgc | tcggttcctg | cgacctcccc | 1260 |
| gaatcccacc | tgaacgagct | ggcggccagg | ggcctgccc | cgcccgtgg | tctggattc | 1320 |
| gacagcgaat | tcgagatgct | gttggccttc | atgacccttg | tgaaacagta | cggcccccgg | 1380 |
| ttcgtgaccg | ggtacaacat | catcaacttc | gactggccct | tcttgctggc | caagttgacg | 1440 |
| gacatttaca | aggccccctt | ggacgggtac | ggccgcatga | acggccgggg | cgtgttcgc | 1500 |
| gtgtgggaca | taggcccagag | ccacttccag | aagcgcagca | agataaaggt | gaacggcatg | 1560 |
| gtgaacatcg | acatgtacgg | gatcataacc | gacaagatca | agctctcgag | ctacaagctc | 1620 |
| aacggcgtgg | ccgaagccgt | cctgaaggac | aagaagaagg | acctgagcta | tcgcgacatc | 1680 |
| cccgccctact | acgcccgggg | gcccgcgcaa | cgcggggtga | tcggcgagta | ctgcatacag | 1740 |
| gattccctgc | tggtgggcca | gtgtttttt | aagttttgc | cccatctgg | gctctcgccc | 1800 |
| gtcgcgcgct | tggcggtat | taacatcacc | cgcaccatct | acgacggcca | gcagatccgc | 1860 |
| gtctttacgt | gcctgctgcg | cctggccgac | cagaagggt | ttattctgcc | ggacacccag | 1920 |
| ggcgattta | ggggcgccgg | gggggaggcg | cccaagcgtc | cggccgcagc | ccgggaggac | 1980 |
| gaggagcggc | cagaggagga | gggggaggac | gaggacgaac | gcgaggagg | cggggcgag | 2040 |
| cgggagccgg | agggcgcgcg | ggagaccgccc | ggccggcacg | tgggttacca | gggggccagg | 2100 |
| gtccttgacc | ccacttccgg | gtttcacgt | aaccctgtgg | tggtgttgc | ctttgccagc | 2160 |
| ctgtacccca | gcatcatcca | ggcccacaac | ctgtgcttca | gcacgctctc | cctgagggcc | 2220 |
| gacgcagtgg | cgcaccttgg | ggcgggcaag | gactacctgg | agatcgaggt | ggggggcgag | 2280 |
| cggctgttct | tcgtcaaggc | tcacgtgcga | gagagcctcc | tcagcatcct | cctgcccggac | 2340 |
| tggctcgcca | tgcgaaagca | gatccgctcg | cggattcccc | agagcagccc | cgaggaggcc | 2400 |
| gtgctcctgg | acaagcagca | ggccgcccattc | aaggtcgtgt | gtaaactcggt | gtacgggttc | 2460 |
| acgggagcgc | agcacggact | cctgcccgtgc | ctgcacgttg | ccgcgcacgg | gacgaccatc | 2520 |
| ggccgcgaga | tgctgctcgc | gacccgcgag | tacgtccacg | cgcgcgtggc | ggccttcgaa | 2580 |
| cagctccctgg | ccgattttccc | ggaggcggcc | gacatgcgcg | ccccggggcc | ctattccatg | 2640 |
| cgcacatct | acggggacac | ggactccata | tttgtcgtgt | gccgcggcct | cacggccgccc | 2700 |
| gggctgacgg | ccatgggcga | caagatggcg | agccacatct | cgcgcgcgc | gtttctgccc | 2760 |
| cccatcaaac | tcgagtgcg | aaagacgttc | accaagctgc | tgctgatcgc | caagaaaaag | 2820 |
| tacatcgccg | tcatctacgg | ggtaagatg | ctcatcaagg | gcgtggatct | ggtgcgcaaa | 2880 |

| | |
|---|------|
| aacaactgcg cgtttatcaa ccgcacctcc agggccctgg tcgacctgct gtttacgac | 2940 |
| gataccgtat ccggagcggc cgccgcgtta gccgagcgcc ccgcagagga gtggctggcg | 3000 |
| cgaccctgc ccgagggact gcagggcgttc ggggccgtcc tcgtagacgc ccatcggcgc | 3060 |
| atcaccgacc cggagagggg catccaggac tttgtcctca ccgccgaact gagcagacac | 3120 |
| ccgcgcgcgt acaccaacaa gcgcctggcc cacctgacgg tgtattacaa gctcatggcc | 3180 |
| ccgcgcgcgc aggtcccgtc catcaaggac cggatcccgt acgtgatcgt ggcggcggacc | 3240 |
| cgcgaggtag aggagacggt cgcgccgtg gccgcctcc gcgagctaga cgccgcgcgc | 3300 |
| ccaggggacg agcccgcccc ccccgccggcc ctgcctccc cggccaagcg ccccccggag | 3360 |
| acgcgcgtcgc atgcccaccc cccgggaggc gcgtccaagc cccgcaagct gctgggtgtcc | 3420 |
| gagctggccg aggatcccgc atacgccatt gcccacggcg tcgcctgaa cacggactat | 3480 |
| tacttctccc acctgttggg ggcggcgtgc gtgacattca aggccctgtt tgggaataac | 3540 |
| gccaagatca ccgagaggtct gttaaaaagg tttattcccg aagtgtggca ccccccggac | 3600 |
| gacgtggccg cgccgcgtccg ggccgcaggg ttccggggcg tgggtgcccgg cgctacggcg | 3660 |
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<210> 6
<211> 1235
<212> PRT
<213> herpes simplex

<400> 6

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Gly Arg Gly Pro Pro Pro Cys Leu Arg Gln Asn Phe Tyr Asn Pro Tyr
 35 40 45

Leu Ala Pro Val Gly Thr Gln Gln Lys Pro Thr Gly Pro Thr Gln Arg
 50 55 60

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Thr | Tyr | Tyr | Ser | Glu | Cys | Asp | Glu | Phe | Arg | Phe | Ile | Ala | Pro | Arg |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 |

Val Leu Asp Glu Asp Ala Pro Pro Glu Lys Arg Ala Gly Val His Asp
85 90 95

Asp Val Leu Arg Val Gly Ser Gly Gly Phe Trp Pro Arg Arg Ser Arg
 115 120 125

Leu Trp Gly Gly Val Asp His Ala Pro Ala Gly Phe Asn Pro Thr Val

| | | |
|---|-----|-----|
| 130 | 135 | 140 |
| Thr Val Phe His Val Tyr Asp Ile Leu Glu Asn Val Glu His Ala Tyr | | |
| 145 | 150 | 155 |
| Gly Met Arg Ala Ala Gln Phe His Ala Arg Phe Met Asp Ala Ile Thr | | |
| 165 | 170 | 175 |
| Pro Thr Gly Thr Val Ile Thr Leu Leu Gly Leu Thr Pro Glu Gly His | | |
| 180 | 185 | 190 |
| Arg Val Ala Val His Val Tyr Gly Thr Arg Gln Tyr Phe Tyr Met Asn | | |
| 195 | 200 | 205 |
| Lys Glu Glu Val Asp Arg His Leu Gln Cys Arg Ala Pro Arg Asp Leu | | |
| 210 | 215 | 220 |
| Cys Glu Arg Met Ala Ala Ala Leu Arg Glu Ser Pro Gly Ala Ser Phe | | |
| 225 | 230 | 235 |
| Arg Gly Ile Ser Ala Asp His Phe Glu Ala Glu Val Val Glu Arg Thr | | |
| 245 | 250 | 255 |
| Asp Val Tyr Tyr Tyr Glu Thr Arg Pro Ala Leu Phe Tyr Arg Val Tyr | | |
| 260 | 265 | 270 |
| Val Arg Ser Gly Arg Val Leu Ser Tyr Leu Cys Asp Asn Phe Cys Pro | | |
| 275 | 280 | 285 |
| Ala Ile Lys Lys Tyr Glu Gly Gly Val Asp Ala Thr Thr Arg Phe Ile | | |
| 290 | 295 | 300 |
| Leu Asp Asn Pro Gly Phe Val Thr Phe Gly Trp Tyr Arg Leu Lys Pro | | |
| 305 | 310 | 315 |
| Gly Arg Asn Asn Thr Leu Ala Gln Pro Arg Ala Pro Met Ala Phe Gly | | |
| 325 | 330 | 335 |
| Thr Ser Ser Asp Val Glu Phe Asn Cys Thr Ala Asp Asn Leu Ala Ile | | |
| 340 | 345 | 350 |
| Glu Gly Gly Met Ser Asp Leu Pro Ala Tyr Lys Leu Met Cys Phe Asp | | |
| 355 | 360 | 365 |
| Ile Glu Cys Lys Ala Gly Gly Glu Asp Glu Leu Ala Phe Pro Val Ala | | |
| 370 | 375 | 380 |
| Gly His Pro Glu Asp Leu Val Ile Gln Ile Ser Cys Leu Leu Tyr Asp | | |
| 385 | 390 | 395 |
| Leu Ser Thr Thr Ala Leu Glu His Val Leu Leu Phe Ser Leu Gly Ser | | |
| 405 | 410 | 415 |
| Cys Asp Leu Pro Glu Ser His Leu Asn Glu Leu Ala Ala Arg Gly Leu | | |
| 420 | 425 | 430 |
| Pro Thr Pro Val Val Leu Glu Phe Asp Ser Glu Phe Glu Met Leu Leu | | |
| 435 | 440 | 445 |
| Ala Phe Met Thr Leu Val Lys Gln Tyr Gly Pro Glu Phe Val Thr Gly | | |
| 450 | 455 | 460 |

Tyr Asn Ile Ile Asn Phe Asp Trp Pro Phe Leu Leu Ala Lys Leu Thr
 465 470 475 480
 Asp Ile Tyr Lys Val Pro Leu Asp Gly Tyr Gly Arg Met Asn Gly Arg
 485 490 495
 Gly Val Phe Arg Val Trp Asp Ile Gly Gln Ser His Phe Gln Lys Arg
 500 505 510
 Ser Lys Ile Lys Val Asn Gly Met Val Asn Ile Asp Met Tyr Gly Ile
 515 520 525
 Ile Thr Asp Lys Ile Lys Leu Ser Ser Tyr Lys Leu Asn Ala Val Ala
 530 535 540
 Glu Ala Val Leu Lys Asp Lys Lys Asp Leu Ser Tyr Arg Asp Ile
 545 550 555 560
 Pro Ala Tyr Tyr Ala Ala Gly Pro Ala Gln Arg Gly Val Ile Gly Glu
 565 570 575
 Tyr Cys Ile Gln Asp Ser Leu Leu Val Gly Gln Leu Phe Phe Lys Phe
 580 585 590
 Leu Pro His Leu Glu Leu Ser Ala Val Ala Arg Leu Ala Gly Ile Asn
 595 600 605
 Ile Thr Arg Thr Ile Tyr Asp Gly Gln Gln Ile Arg Val Phe Thr Cys
 610 615 620
 Leu Leu Arg Leu Ala Asp Gln Lys Gly Phe Ile Leu Pro Asp Thr Gln
 625 630 635 640
 Gly Arg Phe Arg Gly Ala Gly Glu Ala Pro Lys Arg Pro Ala Ala
 645 650 655
 Ala Arg Glu Asp Glu Glu Arg Pro Glu Glu Gly Glu Asp Glu Asp
 660 665 670
 Glu Arg Glu Glu Gly Gly Glu Arg Glu Pro Glu Gly Ala Arg Glu
 675 680 685
 Thr Ala Gly Arg His Val Gly Tyr Gln Gly Ala Arg Val Leu Asp Pro
 690 695 700
 Thr Ser Gly Phe His Val Asn Pro Val Val Val Phe Asp Phe Ala Ser
 705 710 715 720
 Leu Tyr Pro Ser Ile Ile Gln Ala His Asn Leu Cys Phe Ser Thr Leu
 725 730 735
 Ser Leu Arg Ala Asp Ala Val Ala His Leu Glu Ala Gly Lys Asp Tyr
 740 745 750
 Leu Glu Ile Glu Val Gly Gly Arg Arg Leu Phe Phe Val Lys Ala His
 755 760 765
 Val Arg Glu Ser Leu Leu Ser Ile Leu Leu Arg Asp Trp Leu Ala Met
 770 775 780
 Arg Lys Gln Ile Arg Ser Arg Ile Pro Gln Ser Ser Pro Glu Glu Ala
 785 790 795 800

Val Leu Leu Asp Lys Gln Gln Ala Ala Ile Lys Val Val Cys Asn Ser
 805 810 815
 Val Tyr Gly Phe Thr Gly Ala Gln His Gly Leu Leu Pro Cys Leu His
 820 825 830
 Val Ala Ala Thr Val Thr Ile Gly Arg Glu Met Leu Leu Ala Thr
 835 840 845
 Arg Glu Tyr Val His Ala Arg Trp Ala Ala Phe Glu Gln Leu Leu Ala
 850 855 860
 Asp Phe Pro Glu Ala Ala Asp Met Arg Ala Pro Gly Pro Tyr Ser Met
 865 870 875 880
 Arg Ile Ile Tyr Gly Asp Thr Asp Ser Ile Phe Val Leu Cys Arg Gly
 885 890 895
 Leu Thr Ala Ala Gly Leu Thr Ala Met Gly Asp Lys Met Ala Ser His
 900 905 910
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 Thr Phe Thr Lys Leu Leu Leu Ile Ala Lys Lys Lys Tyr Ile Gly Val
 930 935 940
 Ile Tyr Gly Gly Lys Met Leu Ile Lys Gly Val Asp Leu Val Arg Lys
 945 950 955 960
 Asn Asn Cys Ala Phe Ile Asn Arg Thr Ser Arg Ala Leu Val Asp Leu
 965 970 975
 Leu Phe Tyr Asp Asp Thr Val Ser Gly Ala Ala Ala Leu Ala Glu
 980 985 990
 Arg Pro Ala Glu Glu Trp Leu Ala Arg Pro Leu Pro Glu Gly Leu Gln
 995 1000 1005
 Ala Phe Gly Ala Val Leu Val Asp Ala His Arg Arg Ile Thr Asp
 1010 1015 1020
 Pro Glu Arg Asp Ile Gln Asp Phe Val Leu Thr Ala Glu Leu Ser
 1025 1030 1035
 Arg His Pro Arg Ala Tyr Thr Asn Lys Arg Leu Ala His Leu Thr
 1040 1045 1050
 Val Tyr Tyr Lys Leu Met Ala Arg Arg Ala Gln Val Pro Ser Ile
 1055 1060 1065
 Lys Asp Arg Ile Pro Tyr Val Ile Val Ala Gln Thr Arg Glu Val
 1070 1075 1080
 Glu Glu Thr Val Ala Arg Leu Ala Ala Leu Arg Glu Leu Asp Ala
 1085 1090 1095
 Ala Ala Pro Gly Asp Glu Pro Ala Pro Pro Ala Ala Leu Pro Ser
 1100 1105 1110
 Pro Ala Lys Arg Pro Arg Glu Thr Pro Ser His Ala Asp Pro Pro

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|------|------|------|-----|-----|-----|------|-----|-----|-----|-----|------|-----|------|-----|--|
| 1115 | 1120 | 1125 | | | | | | | | | | | | | |
| Gly | Gly | | | | | | | | | | | | | | |
| Ala | Ser | Lys | | | | | | | | | | | | | |
| 1130 | 1135 | 1140 | | | | | | | | | | | | | |
| Pro | Arg | Lys | | | | | | | | | | | | | |
| | | Leu | | | | | | | | | | | | | |
| | | Leu | | | | | | | | | | | | | |
| | | Val | | | | | | | | | | | | | |
| | | Ser | | | | | | | | | | | | | |
| | | Glu | | | | | | | | | | | | | |
| | | Leu | | | | | | | | | | | | | |
| | | Ala | | | | | | | | | | | | | |
| Glu | Asp | Pro | Ala | Tyr | Ala | Ile | Ala | His | Gly | Val | Ala | Leu | Asn | Thr | |
| 1145 | | | | | | 1150 | | | | | | | 1155 | | |
| Asp | Tyr | Tyr | Phe | Ser | His | Leu | Leu | Gly | Ala | Ala | Cys | Val | Thr | Phe | |
| 1160 | | | | | | 1165 | | | | | 1170 | | | | |
| Lys | Ala | Leu | Phe | Gly | Asn | Asn | Ala | Lys | Ile | Thr | Glu | Ser | Leu | Leu | |
| 1175 | | | | | | 1180 | | | | | 1185 | | | | |
| Lys | Arg | Phe | Ile | Pro | Glu | Val | Trp | His | Pro | Pro | Asp | Asp | Val | Ala | |
| 1190 | | | | | | 1195 | | | | | 1200 | | | | |
| Ala | Arg | Leu | Arg | Ala | Ala | Gly | Phe | Gly | Ala | Val | Gly | Ala | Gly | Ala | |
| 1205 | | | | | | 1210 | | | | | 1215 | | | | |
| Thr | Ala | Glu | Glu | Thr | Arg | Arg | Met | Leu | His | Arg | Ala | Phe | Asp | Thr | |
| 1220 | | | | | | 1225 | | | | | 1230 | | | | |
| Leu | Ala | | | | | | | | | | | | | | |
| 1235 | | | | | | | | | | | | | | | |

<210> 7
 <211> 3708
 <212> DNA
 <213> herpes simplex

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| aggcaaaact tttacaaccc ctacctcgcc ccagtcggga cgcaacagaa gccgaccggg | 180 |
| ccaacccagc gccatacgt a statagcgaa tgcgatgaat ttgcattcat cgcccccgg | 240 |
| gtgctggacg aggtgtcccc cccggagaag cgccgggggg tgcacgacgg tcacctaag | 300 |
| cgcgcggggca aggtgtactg cggggggggac gagcgcgacg tcctccgcgt cgggtcgccc | 360 |
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| aaccccaccg tcaccgtctt tcacgtgtac gacatcctgg agaacgtgga gcacgcgtac | 480 |
| ggcatgcgcg cggcccgat ccacgcgcgg tttatggacg ccatcacacc gacggggacc | 540 |
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| acgcggcagt actttacat gaacaaggag gaggtcgaca ggcacctaca atgccgcgcc | 660 |
| ccacgagatc tctgcgagcg catggccgcg gcccctgcgc agtccccggg cgcgtcggtc | 720 |
| cgcggcattt ccgcggacca cttcgaggcg gaggtggtgg agcgcaccga cgtgtactac | 780 |
| tacgagacgc gccccgtctt gtttaccgc gtctacgtcc gaagcggcgc cgtgtgtcg | 840 |
| tacctgtgcg acaacttctg cccggccatc aagaagtacg aggggtgggtt cgacgcccacc | 900 |

| | | | | | | |
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| ggccggaaca | acacgctagc | ccagccgcgg | gccccgatgg | ccttcgggac | atccagcgac | 1020 |
| gtcgagttta | actgtacggc | ggacaacctg | gccatcgagg | ggggcatgag | cgaccctaccg | 1080 |
| gcataacaagc | tcatgtgctt | cgatatcgaa | tgcaaggcgg | ggggggagga | cgagctggcc | 1140 |
| tttccggtgg | ccgggcaccc | ggaggacctg | gtcatccaga | tatcctgtct | gctctacgac | 1200 |
| ctgtccacca | ccgcccctgga | gcacgtcctc | ctgtttcgc | tcggttcctg | cgacctcccc | 1260 |
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| ttcgtgaccg | ggtacaacat | catcaacttc | gactggccct | tcttgctggc | caagctgacg | 1440 |
| gacatttaca | aggtccccct | ggacgggtac | ggccgcatga | acggccgggg | cgtgtttcgc | 1500 |
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| gattccctgc | tggtgggcca | gctgttttt | aagttttgc | cccatctgga | gctctcgcc | 1800 |
| gtcgcgct | tggcggtat | taacatcacc | cgcaccatct | acgacggcca | gcagatccgc | 1860 |
| gtcttacgt | gcctgctgct | cctggccgac | cagaaggct | ttattctgcc | ggacacccag | 1920 |
| ggcgattta | ggggcgccgg | gggggaggcg | cccaagcgtc | cggccgcagc | ccgggaggac | 1980 |
| gaggagcggc | cagaggagga | gggggaggac | gaggacgaac | gcgaggaggg | cgggggcggag | 2040 |
| cgggagccgg | agggcgcgcg | ggagaccgccc | ggccggcacg | tgggtacca | gggggcccagg | 2100 |
| gtccttgacc | ccacttccgg | gtttcatgtg | aacccctgg | tggtgttca | ctttgccagc | 2160 |
| ctgtacccca | gcatcatcca | ggcccacaac | ctgtgcttca | gcacgctctc | cctgagggcc | 2220 |
| gacgcagtgg | cgcacctgga | ggcgggcaag | gactacctgg | agatcgaggt | ggggggcga | 2280 |
| cggctttct | tcgtcaaggc | tcacgtgcga | gagagcctcc | tcagcatcct | cctgcgggac | 2340 |
| tggctcgcca | tgcgaaagca | gatccgctcg | cggattcccc | agagcagccc | cgaggaggcc | 2400 |
| gtgctcctgg | acaaggcagca | ggccgcccac | aaggctgtgt | gtactcggt | ttacgggttc | 2460 |
| acgggagcgc | agcacggact | cctgccgtgc | ctgcacgttg | ccgcgcacgg | gacgaccatc | 2520 |
| ggccgcgaga | tgctgctcgc | gacccgcgag | tacgtccacg | cgcgctgggc | ggccttcgaa | 2580 |
| cagctcctgg | ccgatttccc | ggaggcggcc | gacatgcgcg | ccccgggccc | ctattccatg | 2640 |
| cgcacatct | acggggacac | ggactccatc | tttgcgtgt | gccgcggcct | cacggccgccc | 2700 |
| gggctgacgg | ccgtgggcga | caagatggcg | agccacatct | cgcgcgcgct | gtttctgtcc | 2760 |

| | |
|--|------|
| cccatcaaac tcgagtgcga aaagacgttc accaagctgc tgctgatcgc caagaaaaag | 2820 |
| tacatcggcg tcatctacgg gggtaagatg ctcataagg gcgtggatct ggtgcgcaaa | 2880 |
| aacaactgcg cgtttatcaa ccgcacctcc agggccctgg tcgacctgct gtttacgac | 2940 |
| gataccgtat ccggagcggc cgccgcgtta gccgagcgcc ccgcagagga gtggctggcg | 3000 |
| cgacccctgc ccgagggact gcaggcgttc gggccgtcc tcgttagacgc ccatacgccgc | 3060 |
| atcaccgacc cggagagggc catccaggac tttgtcctca ccgcgaact gagcagacac | 3120 |
| ccgcgcgcgt acaccaacaa gcgcctggcc cacctgacgg tgtattacaa gctcatggcc | 3180 |
| cgccgcgcgc aggtcccgtc catcaaggac cggatcccg acgtgatcgt ggcccagacc | 3240 |
| cgcgaggtag aggagacggt cgccgcggctg gccgcctcc gcgcagtcga cgccgcgcgc | 3300 |
| ccaggggacg agcccgcccc ccccgccggcc ctgcgcctccc cggccaaagcg ccccccggag | 3360 |
| acgcgcgttc atgcgcaccc cccgggaggc gcgtccaagc cccgcaagct gctgggtgtcc | 3420 |
| gagctggccg aggatccgc atacgcatt gcccacggcg tcgcgcctgaa cacggactat | 3480 |
| tacttctccc acctgttggg ggcggcgtgc gtgacattca aggccctgtt tgggataaac | 3540 |
| gccaagatca ccgagagtct gttaaaaagg ttatcccg aagtgtggca ccccccggac | 3600 |
| gacgtggccg cgccgcctccg ggccgcaggg ttccggccgg tgggtgcgcgg cgctacggcg | 3660 |
| gaggaaactc gtcgaatgtt gcatagagcc tttgatactc tagcatga | 3708 |

<210> 8
 <211> 1235
 <212> PRT
 <213> herpes simplex

<400> 8

Met Phe Ser Gly Gly Gly Pro Leu Ser Pro Gly Gly Lys Ser Ala
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Ala Arg Ala Ala Ser Gly Phe Phe Ala Pro Ala Gly Pro Arg Gly Ala
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Gly Arg Gly Pro Pro Pro Cys Leu Arg Gln Asn Phe Tyr Asn Pro Tyr
 35 40 45

Leu Ala Pro Val Gly Thr Gln Gln Lys Pro Thr Gly Pro Thr Gln Arg
 50 55 60

His Thr Tyr Tyr Ser Glu Cys Asp Glu Phe Arg Phe Ile Ala Pro Arg
 65 70 75 80

Val Leu Asp Glu Asp Ala Pro Pro Glu Lys Arg Ala Gly Val His Asp
 85 90 95

Gly His Leu Lys Arg Ala Pro Lys Val Tyr Cys Gly Gly Asp Glu Arg
 100 105 110

Asp Val Leu Arg Val Gly Ser Gly Gly Phe Trp Pro Arg Arg Ser Arg

| 115 | 120 | 125 |
|---|-----|-----|
| Leu Trp Gly Gly Val Asp His Ala Pro Ala Gly Phe Asn Pro Thr Val | | |
| 130 | 135 | 140 |
| Thr Val Phe His Val Tyr Asp Ile Leu Glu Asn Val Glu His Ala Tyr | | |
| 145 | 150 | 160 |
| Gly Met Arg Ala Ala Gln Phe His Ala Arg Phe Met Asp Ala Ile Thr | | |
| 165 | 170 | 175 |
| Pro Thr Gly Thr Val Ile Thr Leu Leu Gly Leu Thr Pro Glu Gly His | | |
| 180 | 185 | 190 |
| Arg Val Ala Val His Val Tyr Gly Thr Arg Gln Tyr Phe Tyr Met Asn | | |
| 195 | 200 | 205 |
| Lys Glu Glu Val Asp Arg His Leu Gln Cys Arg Ala Pro Arg Asp Leu | | |
| 210 | 215 | 220 |
| Cys Glu Arg Met Ala Ala Ala Leu Arg Glu Ser Pro Gly Ala Ser Phe | | |
| 225 | 230 | 240 |
| Arg Gly Ile Ser Ala Asp His Phe Glu Ala Glu Val Val Glu Arg Thr | | |
| 245 | 250 | 255 |
| Asp Val Tyr Tyr Glu Thr Arg Pro Ala Leu Phe Tyr Arg Val Tyr | | |
| 260 | 265 | 270 |
| Val Arg Ser Gly Arg Val Leu Ser Tyr Leu Cys Asp Asn Phe Cys Pro | | |
| 275 | 280 | 285 |
| Ala Ile Lys Lys Tyr Glu Gly Val Asp Ala Thr Thr Arg Phe Ile | | |
| 290 | 295 | 300 |
| Leu Asp Asn Pro Gly Phe Val Thr Phe Gly Trp Tyr Arg Leu Lys Pro | | |
| 305 | 310 | 320 |
| Gly Arg Asn Asn Thr Leu Ala Gln Pro Arg Ala Pro Met Ala Phe Gly | | |
| 325 | 330 | 335 |
| Thr Ser Ser Asp Val Glu Phe Asn Cys Thr Ala Asp Asn Leu Ala Ile | | |
| 340 | 345 | 350 |
| Glu Gly Gly Met Ser Asp Leu Pro Ala Tyr Lys Leu Met Cys Phe Asp | | |
| 355 | 360 | 365 |
| Ile Glu Cys Lys Ala Gly Gly Glu Asp Glu Leu Ala Phe Pro Val Ala | | |
| 370 | 375 | 380 |
| Gly His Pro Glu Asp Leu Val Ile Gln Ile Ser Cys Leu Leu Tyr Asp | | |
| 385 | 390 | 400 |
| Leu Ser Thr Thr Ala Leu Glu His Val Leu Leu Phe Ser Leu Gly Ser | | |
| 405 | 410 | 415 |
| Cys Asp Leu Pro Glu Ser His Leu Asn Glu Leu Ala Ala Arg Gly Leu | | |
| 420 | 425 | 430 |
| Pro Thr Pro Val Val Leu Glu Phe Asp Ser Glu Phe Glu Met Leu Leu | | |
| 435 | 440 | 445 |

Ala Phe Met Thr Leu Val Lys Gln Tyr Gly Pro Glu Phe Val Thr Gly
 450 455 460
 Tyr Asn Ile Ile Asn Phe Asp Trp Pro Phe Leu Leu Ala Lys Leu Thr
 465 470 475 480
 Asp Ile Tyr Lys Val Pro Leu Asp Gly Tyr Gly Arg Met Asn Gly Arg
 485 490 495
 Gly Val Phe Arg Val Trp Asp Ile Gly Gln Ser His Phe Gln Lys Arg
 500 505 510
 Ser Lys Ile Lys Val Asn Gly Met Val Asn Ile Asp Met Tyr Gly Ile
 515 520 525
 Ile Thr Asp Lys Ile Lys Leu Ser Ser Tyr Lys Leu Asn Ala Val Ala
 530 535 540
 Glu Ala Val Leu Lys Asp Lys Lys Asp Leu Ser Tyr Arg Asp Ile
 545 550 555 560
 Pro Ala Tyr Tyr Ala Ala Gly Pro Ala Gln Arg Gly Val Ile Gly Glu
 565 570 575
 Tyr Cys Ile Gln Asp Ser Leu Leu Val Gly Gln Leu Phe Phe Lys Phe
 580 585 590
 Leu Pro His Leu Glu Leu Ser Ala Val Ala Arg Leu Ala Gly Ile Asn
 595 600 605
 Ile Thr Arg Thr Ile Tyr Asp Gly Gln Gln Ile Arg Val Phe Thr Cys
 610 615 620
 Leu Leu Arg Leu Ala Asp Gln Lys Gly Phe Ile Leu Pro Asp Thr Gln
 625 630 635 640
 Gly Arg Phe Arg Gly Gly Glu Ala Pro Lys Arg Pro Ala Ala
 645 650 655
 Ala Arg Glu Asp Glu Glu Arg Pro Glu Glu Glu Gly Glu Asp Glu Asp
 660 665 670
 Glu Arg Glu Glu Gly Gly Glu Arg Glu Pro Glu Gly Ala Arg Glu
 675 680 685
 Thr Ala Gly Arg His Val Gly Tyr Gln Gly Ala Arg Val Leu Asp Pro
 690 695 700
 Thr Ser Gly Phe His Val Asn Pro Val Val Val Phe Asp Phe Ala Ser
 705 710 715 720
 Leu Tyr Pro Ser Ile Ile Gln Ala His Asn Leu Cys Phe Ser Thr Leu
 725 730 735
 Ser Leu Arg Ala Asp Ala Val Ala His Leu Glu Ala Gly Lys Asp Tyr
 740 745 750
 Leu Glu Ile Glu Val Gly Gly Arg Arg Leu Phe Phe Val Lys Ala His
 755 760 765
 Val Arg Glu Ser Leu Leu Ser Ile Leu Leu Arg Asp Trp Leu Ala Met
 770 775 780

Arg Lys Gln Ile Arg Ser Arg Ile Pro Gln Ser Ser Pro Glu Glu Ala
 785 790 795 800
 Val Leu Leu Asp Lys Gln Gln Ala Ala Ile Lys Val Val Cys Asn Ser
 805 810 815
 Val Tyr Gly Phe Thr Gly Ala Gln His Gly Leu Leu Pro Cys Leu His
 820 825 830
 Val Ala Ala Thr Val Thr Ile Gly Arg Glu Met Leu Leu Ala Thr
 835 840 845
 Arg Glu Tyr Val His Ala Arg Trp Ala Ala Phe Glu Gln Leu Leu Ala
 850 855 860
 Asp Phe Pro Glu Ala Ala Asp Met Arg Ala Pro Gly Pro Tyr Ser Met
 865 870 875 880
 Arg Ile Ile Tyr Gly Asp Thr Asp Ser Ile Phe Val Leu Cys Arg Gly
 885 890 895
 Leu Thr Ala Ala Gly Leu Thr Ala Val Gly Asp Lys Met Ala Ser His
 900 905 910
 Ile Ser Arg Ala Leu Phe Leu Ser Pro Ile Lys Leu Glu Cys Glu Lys
 915 920 925
 Thr Phe Thr Lys Leu Leu Ile Ala Lys Lys Tyr Ile Gly Val
 930 935 940
 Ile Tyr Gly Gly Lys Met Leu Ile Lys Gly Val Asp Leu Val Arg Lys
 945 950 955 960
 Asn Asn Cys Ala Phe Ile Asn Arg Thr Ser Arg Ala Leu Val Asp Leu
 965 970 975
 Leu Phe Tyr Asp Asp Thr Val Ser Gly Ala Ala Ala Leu Ala Glu
 980 985 990
 Arg Pro Ala Glu Glu Trp Leu Ala Arg Pro Leu Pro Glu Gly Leu Gln
 995 1000 1005
 Ala Phe Gly Ala Val Leu Val Asp Ala His Arg Arg Ile Thr Asp
 1010 1015 1020
 Pro Glu Arg Asp Ile Gln Asp Phe Val Leu Thr Ala Glu Leu Ser
 1025 1030 1035
 Arg His Pro Arg Ala Tyr Thr Asn Lys Arg Leu Ala His Leu Thr
 1040 1045 1050
 Val Tyr Tyr Lys Leu Met Ala Arg Arg Ala Gln Val Pro Ser Ile
 1055 1060 1065
 Lys Asp Arg Ile Pro Tyr Val Ile Val Ala Gln Thr Arg Glu Val
 1070 1075 1080
 Glu Glu Thr Val Ala Arg Leu Ala Ala Leu Arg Glu Leu Asp Ala
 1085 1090 1095
 Ala Ala Pro Gly Asp Glu Pro Ala Pro Pro Ala Ala Leu Pro Ser

| | | |
|-----------------------------|---------------------|-------------|
| 1100 | 1105 | 1110 |
| Pro Ala Lys Arg Pro Arg Glu | Thr Pro Leu His Ala | Asp Pro Pro |
| 1115 | 1120 | 1125 |
| Gly Gly Ala Ser Lys Pro Arg | Lys Leu Leu Val Ser | Glu Leu Ala |
| 1130 | 1135 | 1140 |
| Glu Asp Pro Ala Tyr Ala Ile | Ala His Gly Val Ala | Leu Asn Thr |
| 1145 | 1150 | 1155 |
| Asp Tyr Tyr Phe Ser His Leu | Leu Gly Ala Ala Cys | Val Thr Phe |
| 1160 | 1165 | 1170 |
| Lys Ala Leu Phe Gly Asn Asn | Ala Lys Ile Thr Glu | Ser Leu Leu |
| 1175 | 1180 | 1185 |
| Lys Arg Phe Ile Pro Glu Val | Trp His Pro Pro Asp | Asp Val Ala |
| 1190 | 1195 | 1200 |
| Ala Arg Leu Arg Ala Ala Gly | Phe Gly Ala Val Gly | Ala Gly Ala |
| 1205 | 1210 | 1215 |
| Thr Ala Glu Glu Thr Arg Arg | Met Leu His Arg Ala | Phe Asp Thr |
| 1220 | 1225 | 1230 |

Leu Ala
1235

<210> 9
<211> 3708
<212> DNA
<213> herpes simplex

| | |
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| tccgggtttt ttgcgcccgc cggccctcgc ggagccggcc ggggacccccc gccttgtttg | 180 |
| aggcaaaaact tttacaaccc ctacctcgcc ccagtcggga cgcaacagaa gccgaccggg | 240 |
| ccaacccagc gccatacgt a ctatagcgaa tgcgatgaat ttcgattcat cgccccgccc | 300 |
| gtgctggacg aggatgcccc cccggagaag cgcgcgggg tgcacgacgg tcacctcaag | 360 |
| cgcgcacca aggtgtactg cgggggggac gagcgcgacg tccctccggt cgggtcgggc | 420 |
| ggcttctggc cgcggcgctc ggcgcgttgg ggcggcgtgg accacgcccc ggccgggttc | 480 |
| aacccaccc tcaccgttt tcacgttat gacatcctgg agaacgtgga gcacgcgtac | 540 |
| ggcatgcgcg cggcccagtt ccacgcgcgg tttatggacg ccatcacacc gacggggacc | 600 |
| gtcatcacgc tcctggcct gactccggaa ggcacccggg tggccgttca cgtttacggc | 660 |
| acgcggcagt acttttacat gaacaaggag gaggttgaca ggcacctaca atgcccgcgc | 720 |
| ccacgagatc tctgcgagcg catggccgcg gccctgcgcg agtccccggg cgcgtcggttc | 780 |
| cgcggcatct cccggacca cttcgaggcg gaggtggtgg agcgcaccga cgtgtactac | 840 |
| tacgagacgc gccccgtct gtttaccgc gtctacgtcc gaagcggcgc cgtgctgtcg | |

| | |
|---|------|
| tacctgtgcg acaacttctg cccggccatc aagaagtacg agggtggggt cgacgccacc | 900 |
| acccggttca tcctggacaa ccccggttc gtcaccttcg gctggtaccg tctcaaaccg | 960 |
| ggccggaaca acacgctacg ccagccgcgg gccccatgg ctttcgggac atccagcgat | 1020 |
| gtcgagtttta actgtacggc ggacaacctg gccatcgagg ggggcatgag cgacctaccg | 1080 |
| gcataacaagc tcatgtgctt cgatatacgaa tgcaaggcgg ggggggagga cgagctggcc | 1140 |
| tttccggtgg ccgggcaccc ggaggacctg gtcatccaga tatcctgtct gctctacgac | 1200 |
| ctgtccacca cgcgccttga gcacgtcctc ctgtttcgc tcggttcctg cgacccccc | 1260 |
| gaatcccacc tgaacgagct ggcggccagg ggcctgccc cgcgggttgt tctggattc | 1320 |
| gacagcgaat tcgagatgct gttggccttc atgacccttgc tgaaacagta cggccccc | 1380 |
| ttcgtgaccg ggtacaacat aatcaacttc gactggccct tcttgctggc caagctgacg | 1440 |
| gacatttaca aggtccccct ggacgggtac ggccgcata acggccgggg cgtgtttcgc | 1500 |
| gtgtgggaca taggcccagag ccacttccag aagcgcagca agataaaggt gaacggcatg | 1560 |
| gtgaacatcg acatgtacgg gattataacc gacaagatca agctctcgag ctacaagctc | 1620 |
| aacgcgtgg ccgaagccgt cctgaaggac aagaagaagg acctgagcta tcgcacatc | 1680 |
| cccacctact acgcccggg gcccgcgaa cgcgggtga tcggcgagta ctgcatacag | 1740 |
| gattccctgc tggtgggcca gctgttttt aagttttgc cccatctggc gctctggcc | 1800 |
| gtcgcgct tggcggttat taacatcacc cgcaccatct acgacggcca gcagatccgc | 1860 |
| gtctttacgt gcctgctgcg cctggccac cagaagggtt ttattctgcc ggacacccag | 1920 |
| ggcgattta gggcgccgg gggggaggcg cccaagcgtc cggccgcagc cggggaggac | 1980 |
| gaggagcggc cagaggagga gggggaggac gagaacgaac gcgaggaggg cggggcggag | 2040 |
| cgggagccgg agggcgccgc ggagaccgcc ggccggcagc tgggtacca gggggccagg | 2100 |
| gtccttgcacc ccacttccgg gttcacgtg aacccctgg tggtgttcga ctttgccagc | 2160 |
| ctgtacccca gcatcatcca ggcccacaac ctgtgcttca gcacgtcctc cctgagggcc | 2220 |
| gacgcagtgg cgcaccttggc ggccggcaag gactacctgg agatcgaggt gggggggcga | 2280 |
| cggctgttct tggtaaggc tcacgtgcga gagagcctcc tcagcatct cctgcgggac | 2340 |
| tggctcgcca tgcgaaagca gatccgctcg cggattcccc agagcagccc cgaggaggcc | 2400 |
| gtgctcctgg acaagcagca ggccgccatc aaggctgtgt gtaactcggt ttacgggttc | 2460 |
| acgggagcgc agcacggact cctgcccgtc ctgcacgttg cgcgcacggc gacgaccatc | 2520 |
| ggccgcccaga tgctgctcgc gacccgcgag tacgtccacg cgcgcgtggc ggccttcgaa | 2580 |
| cagctcctgg ccgattttccc ggaggcggcc gacatgcgcg cccccgggac ctattccatg | 2640 |
| cgcacatct acggggacac ggactccata ttgtgtgtgt gccgcggcct cacggccgccc | 2700 |

| | | | | | | |
|------------|------------|------------|------------|------------|-------------|------|
| gggctgacgg | ccgtggcg | caagatggcg | agccacatct | cgcgcg | gtttctgccc | 2760 |
| cccatcaa | ac | tcgagtgcga | aaagacgttc | accaagctgc | tgctgatgc | 2820 |
| tacatcg | cg | cg | ggtaagatg | ctcatcaagg | gcgtggatct | 2880 |
| aacaactgcg | cg | tttatcaa | ccgcac | ctcc | agggccctgg | 2940 |
| gataccgtat | ccggagcggc | cgccgcgtt | gccgagcgcc | ccgcagagga | gtggctggcg | 3000 |
| cgacc | cc | cg | ggact | gcaggcgtt | ggggccgtcc | 3060 |
| atcaccgacc | cg | gagaggg | catccaggac | tttgttctca | ccgccaact | 3120 |
| ccgcgcgt | acaccaacaa | gcgc | ctggcc | cac | ctgacgg | 3180 |
| cgccgcgc | aggtcccg | tc | ataggac | cgatcccgt | acgtgatcg | 3240 |
| cgcgaggt | agg | agacgg | cg | gcggct | gccgagctaga | 3300 |
| ccagggacg | agcc | ggcccc | cccc | cgcc | ccgc | 3360 |
| acgcccgtc | ct | ggc | gaccc | cc | cc | 3420 |
| gagctggccg | agg | atcccgc | at | acgc | cc | 3480 |
| tacttctccc | ac | ctgttggg | ggcggcgt | gt | gacatt | 3540 |
| gccaagatca | cc | gagagt | ct | aaaaagg | tttattcc | 3600 |
| gacgtggccg | cg | cggtcc | gac | cg | ttcgggg | 3660 |
| gaggaaactc | gt | caatgtt | gc | atagagcc | tttgata | 3708 |
| | | | | | actc | |

<210> 10
 <211> 1235
 <212> PRT
 <213> herpes simplex

<400> 10

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Phe | Ser | Gly | Gly | Gly | Gly | Pro | Leu | Ser | Pro | Gly | Gly | Lys | Ser | Ala | |
| 1 | | | | | | | | | | | | | | | | 15 |
| | | | | | | | | | | | | | | | | |
| Ala | Arg | Ala | Ala | Ser | Gly | Phe | Phe | Ala | Pro | Ala | Gly | Pro | Arg | Gly | Ala | |
| | | | | | | | | | | | | | | | | 20 |
| | | | | | | | | | | | | | | | | 25 |
| Gly | Arg | Gly | Pro | Pro | Pro | Cys | Leu | Arg | Gln | Asn | Phe | Tyr | Asn | Pro | Tyr | |
| | | | | | | | | | | | | | | | | 35 |
| | | | | | | | | | | | | | | | | 40 |
| Leu | Ala | Pro | Val | Gly | Thr | Gln | Gln | Lys | Pro | Thr | Gly | Pro | Thr | Gln | Arg | |
| | | | | | | | | | | | | | | | | 50 |
| | | | | | | | | | | | | | | | | 55 |
| His | Thr | Tyr | Tyr | Ser | Glu | Cys | Asp | Glu | Phe | Arg | Phe | Ile | Ala | Pro | Arg | |
| | | | | | | | | | | | | | | | | 65 |
| | | | | | | | | | | | | | | | | 70 |
| Val | Leu | Asp | Glu | Asp | Ala | Pro | Pro | Glu | Lys | Arg | Ala | Gly | Val | His | Asp | |
| | | | | | | | | | | | | | | | | 85 |
| | | | | | | | | | | | | | | | | 90 |
| Gly | His | Leu | Lys | Arg | Ala | Pro | Lys | Val | Tyr | Cys | Gly | Asp | Glu | Arg | | |

| 100 | 105 | 110 |
|---|-----|-----|
| Asp Val Leu Arg Val Gly Ser Gly Gly Phe Trp Pro Arg Arg Ser Arg | | |
| 115 | 120 | 125 |
| Leu Trp Gly Gly Val Asp His Ala Pro Ala Gly Phe Asn Pro Thr Val | | |
| 130 | 135 | 140 |
| Thr Val Phe His Val Tyr Asp Ile Leu Glu Asn Val Glu His Ala Tyr | | |
| 145 | 150 | 160 |
| Gly Met Arg Ala Ala Gln Phe His Ala Arg Phe Met Asp Ala Ile Thr | | |
| 165 | 170 | 175 |
| Pro Thr Gly Thr Val Ile Thr Leu Leu Gly Leu Thr Pro Glu Gly His | | |
| 180 | 185 | 190 |
| Arg Val Ala Val His Val Tyr Gly Thr Arg Gln Tyr Phe Tyr Met Asn | | |
| 195 | 200 | 205 |
| Lys Glu Glu Val Asp Arg His Leu Gln Cys Arg Ala Pro Arg Asp Leu | | |
| 210 | 215 | 220 |
| Cys Glu Arg Met Ala Ala Ala Leu Arg Glu Ser Pro Gly Ala Ser Phe | | |
| 225 | 230 | 240 |
| Arg Gly Ile Ser Ala Asp His Phe Glu Ala Glu Val Val Glu Arg Thr | | |
| 245 | 250 | 255 |
| Asp Val Tyr Tyr Tyr Glu Thr Arg Pro Ala Leu Phe Tyr Arg Val Tyr | | |
| 260 | 265 | 270 |
| Val Arg Ser Gly Arg Val Leu Ser Tyr Leu Cys Asp Asn Phe Cys Pro | | |
| 275 | 280 | 285 |
| Ala Ile Lys Lys Tyr Glu Gly Gly Val Asp Ala Thr Thr Arg Phe Ile | | |
| 290 | 295 | 300 |
| Leu Asp Asn Pro Gly Phe Val Thr Phe Gly Trp Tyr Arg Leu Lys Pro | | |
| 305 | 310 | 320 |
| Gly Arg Asn Asn Thr Leu Ala Gln Pro Arg Ala Pro Met Ala Phe Gly | | |
| 325 | 330 | 335 |
| Thr Ser Ser Asp Val Glu Phe Asn Cys Thr Ala Asp Asn Leu Ala Ile | | |
| 340 | 345 | 350 |
| Glu Gly Gly Met Ser Asp Leu Pro Ala Tyr Lys Leu Met Cys Phe Asp | | |
| 355 | 360 | 365 |
| Ile Glu Cys Lys Ala Gly Gly Glu Asp Glu Leu Ala Phe Pro Val Ala | | |
| 370 | 375 | 380 |
| Gly His Pro Glu Asp Leu Val Ile Gln Ile Ser Cys Leu Leu Tyr Asp | | |
| 385 | 390 | 400 |
| Leu Ser Thr Thr Ala Leu Glu His Val Leu Leu Phe Ser Leu Gly Ser | | |
| 405 | 410 | 415 |
| Cys Asp Leu Pro Glu Ser His Leu Asn Glu Leu Ala Ala Arg Gly Leu | | |
| 420 | 425 | 430 |

Pro Thr Pro Val Val Leu Glu Phe Asp Ser Glu Phe Glu Met Leu Leu
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 Ala Phe Met Thr Leu Val Lys Gln Tyr Gly Pro Glu Phe Val Thr Gly
 450 455 460
 Tyr Asn Ile Ile Asn Phe Asp Trp Pro Phe Leu Leu Ala Lys Leu Thr
 465 470 475 480
 Asp Ile Tyr Lys Val Pro Leu Asp Gly Tyr Gly Arg Met Asn Gly Arg
 485 490 495
 Gly Val Phe Arg Val Trp Asp Ile Gly Gln Ser His Phe Gln Lys Arg
 500 505 510
 Ser Lys Ile Lys Val Asn Gly Met Val Asn Ile Asp Met Tyr Gly Ile
 515 520 525
 Ile Thr Asp Lys Ile Lys Leu Ser Ser Tyr Lys Leu Asn Ala Val Ala
 530 535 540
 Glu Ala Val Leu Lys Asp Lys Lys Asp Leu Ser Tyr Arg Asp Ile
 545 550 555 560
 Pro Thr Tyr Tyr Ala Ala Gly Pro Ala Gln Arg Gly Val Ile Gly Glu
 565 570 575
 Tyr Cys Ile Gln Asp Ser Leu Leu Val Gly Gln Leu Phe Phe Lys Phe
 580 585 590
 Leu Pro His Leu Glu Leu Ser Ala Val Ala Arg Leu Ala Gly Ile Asn
 595 600 605
 Ile Thr Arg Thr Ile Tyr Asp Gly Gln Gln Ile Arg Val Phe Thr Cys
 610 615 620
 Leu Leu Arg Leu Ala Asp Gln Lys Gly Phe Ile Leu Pro Asp Thr Gln
 625 630 635 640
 Gly Arg Phe Arg Gly Ala Gly Glu Ala Pro Lys Arg Pro Ala Ala
 645 650 655
 Ala Arg Glu Asp Glu Glu Arg Pro Glu Glu Gly Glu Asp Glu Asn
 660 665 670
 Glu Arg Glu Glu Gly Gly Glu Arg Glu Pro Glu Gly Ala Arg Glu
 675 680 685
 Thr Ala Gly Arg His Val Gly Tyr Gln Gly Ala Arg Val Leu Asp Pro
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 Thr Ser Gly Phe His Val Asn Pro Val Val Val Phe Asp Phe Ala Ser
 705 710 715 720
 Leu Tyr Pro Ser Ile Ile Gln Ala His Asn Leu Cys Phe Ser Thr Leu
 725 730 735
 Ser Leu Arg Ala Asp Ala Val Ala His Leu Glu Ala Gly Lys Asp Tyr
 740 745 750
 Leu Glu Ile Glu Val Gly Gly Arg Arg Leu Phe Phe Val Lys Ala His
 755 760 765

Val Arg Glu Ser Leu Leu Ser Ile Leu Leu Arg Asp Trp Leu Ala Met
 770 775 780
 Arg Lys Gln Ile Arg Ser Arg Ile Pro Gln Ser Ser Pro Glu Glu Ala
 785 790 795 800
 Val Leu Leu Asp Lys Gln Gln Ala Ala Ile Lys Val Val Cys Asn Ser
 805 810 815
 Val Tyr Gly Phe Thr Gly Ala Gln His Gly Leu Leu Pro Cys Leu His
 820 825 830
 Val Ala Ala Thr Val Thr Ile Gly Arg Glu Met Leu Leu Ala Thr
 835 840 845
 Arg Glu Tyr Val His Ala Arg Trp Ala Ala Phe Glu Gln Leu Leu Ala
 850 855 860
 Asp Phe Pro Glu Ala Ala Asp Met Arg Ala Pro Gly Pro Tyr Ser Met
 865 870 875 880
 Arg Ile Ile Tyr Gly Asp Thr Asp Ser Ile Phe Val Leu Cys Arg Gly
 885 890 895
 Leu Thr Ala Ala Gly Leu Thr Ala Val Gly Asp Lys Met Ala Ser His
 900 905 910
 Ile Ser Arg Ala Leu Phe Leu Pro Pro Ile Lys Leu Glu Cys Glu Lys
 915 920 925
 Thr Phe Thr Lys Leu Leu Leu Ile Ala Lys Lys Tyr Ile Gly Val
 930 935 940
 Ile Tyr Gly Lys Met Leu Ile Lys Gly Val Asp Leu Val Arg Lys
 945 950 955 960
 Asn Asn Cys Ala Phe Ile Asn Arg Thr Ser Arg Ala Leu Val Asp Leu
 965 970 975
 Leu Phe Tyr Asp Asp Thr Val Ser Gly Ala Ala Ala Leu Ala Glu
 980 985 990
 Arg Pro Ala Glu Glu Trp Leu Ala Arg Pro Leu Pro Glu Gly Leu Gln
 995 1000 1005
 Ala Phe Gly Ala Val Leu Val Asp Ala His Arg Arg Ile Thr Asp
 1010 1015 1020
 Pro Glu Arg Asp Ile Gln Asp Phe Val Leu Thr Ala Glu Leu Ser
 1025 1030 1035
 Arg His Pro Arg Ala Tyr Thr Asn Lys Arg Leu Ala His Leu Thr
 1040 1045 1050
 Val Tyr Tyr Lys Leu Met Ala Arg Arg Ala Gln Val Pro Ser Ile
 1055 1060 1065
 Lys Asp Arg Ile Pro Tyr Val Ile Val Ala Gln Thr Arg Glu Val
 1070 1075 1080
 Glu Glu Thr Val Ala Arg Leu Ala Ala Leu Arg Glu Leu Asp Ala

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|-----------------------------|---------------------|-------------|
| 1085 | 1090 | 1095 |
| Ala Ala Pro Gly Asp Glu Pro | Ala Pro Pro Ala Ala | Leu Pro Ser |
| 1100 | 1105 | 1110 |
| Pro Ala Lys Arg Pro Arg Glu | Thr Pro Ser Pro Ala | Asp Pro Pro |
| 1115 | 1120 | 1125 |
| Gly Gly Ala Ser Lys Pro Arg | Lys Leu Leu Val Ser | Glu Leu Ala |
| 1130 | 1135 | 1140 |
| Glu Asp Pro Ala Tyr Ala Ile | Ala His Gly Val Ala | Leu Asn Thr |
| 1145 | 1150 | 1155 |
| Asp Tyr Tyr Phe Ser His Leu | Leu Gly Ala Ala Cys | Val Thr Phe |
| 1160 | 1165 | 1170 |
| Lys Ala Leu Phe Gly Asn Asn | Ala Lys Ile Thr Glu | Ser Leu Leu |
| 1175 | 1180 | 1185 |
| Lys Arg Phe Ile Pro Glu Val | Trp His Pro Pro Asp | Asp Val Ala |
| 1190 | 1195 | 1200 |
| Ala Arg Leu Arg Thr Ala Gly | Phe Gly Ala Val Gly | Ala Gly Ala |
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| Thr Ala Glu Glu Thr Arg Arg | Met Leu His Arg Ala | Phe Asp Thr |
| 1220 | 1225 | 1230 |

Leu Ala
1235

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<212> DNA
<213> herpes simplex

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| cgtcagcggtt cgcagcccggtt ctccgcgcag ggctcgggca agcggccgccc | acagaaaacag | 120 |
| tttttgcaga tcgtgccgcg aggtgtcatg ttgcacggtc agacggggtt gatcaagcat | | 180 |
| aagacgggac ggctgcctct catgttctat cgagagatta aacatttggtt gagtcatgac | | 240 |
| atggtttggc cgtgtcccttg ggcgcgagacc ctgggtggtc gcgtgggtggg acctattcg | | 300 |
| tttcacacccat acgatcagac ggacgcccgtt ctcttcttcg actcgcccgaa aacatgtgtcg | | 360 |
| ccgcgcgtatc gtcagcatct ggtgccttcg gggAACGTGT tgctttctt cggggccaca | | 420 |
| gaacacggct acagtatctg cgtcaacgtt ttccggcagc gcagctactt ttactgtgag | | 480 |
| tacagcgaca ccgataggct gcgtgagggtc attgccagcg tgggcgaact agtgcggaa | | 540 |
| ccgcggacgc catacgccgt gtctgtcactg ccggccacca agacctccat ctatgggtac | | 600 |
| gggacgcgac ccgtgcccga tttgcagtgt gtgtctatca gcaactggac catggccaga | | 660 |
| aaaatcgccg agtatctgct ggagcagggt tttcccggt acgaggccg tggatccg | | 720 |

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|--|------|
| ctgacgcgtt tggtcatcga tcggcggatc accacgttcg gctggtgctc cgtgaatcgt | 780 |
| tacgactggc ggcagcaggg tcgcgcgtcg acttgtgata tcgaggtaga ctgcgatgtc | 840 |
| tctgacacctgg tggctgtgcc cgacgacagc tcgtggccgc gctatcgatg cctgtcccttc | 900 |
| gatatcgagt gcatgagcgg cgagggtggt tttccctgcg ccgagaagtc cgatgacatt | 960 |
| gtcattcaga tctcgtgcgt gtgctacgag acggggggaa acaccgcccgt ggatcagggg | 1020 |
| atcccaaacg ggaacgatgg tcggggctgc acttcggagg gtgtgatctt tgggcactcg | 1080 |
| ggcttcatc tctttacgat cggcacctgc gggcaggtgg gcccagacgt ggacgtctac | 1140 |
| gagttccctt ccgaatacga gctgctgctg ggcttatgc ttttcttca acggtacgctg | 1200 |
| ccggccctttg tgaccggtta caacatcaac tctttgact tgaagtacat cctcacgcgt | 1260 |
| ctcgagtacc tgtataaggt ggactcgcag cgcttctgca agttgcctac ggccgcaggc | 1320 |
| ggccgtttctt ttttacacag ccccgccgtg gttttaagc ggcaagtacgc cgccgctttt | 1380 |
| ccctcggctt ctcacaacaa tccggccagc acggccgcca ccaaggtgta tattgcgggt | 1440 |
| tcggtggtt tcgacatgta ccctgtatgc atggccaaga ctaactcgcc caactataag | 1500 |
| ctcaacacta tggccgagct ttacctgcgg caacgcagg atgacctgtc ttacaaggac | 1560 |
| atccccgcgtt gttcgtggc taatgccgag ggccgcgccc aggtaggccg ttactgtctg | 1620 |
| caggacgccc tattggtgcg cgatctgtc aacaccatta atttcacta cgaggccgg | 1680 |
| gccatcgccgc ggctggctaa aattccgttg cggcgtgtca tcttgacgg acagcagatc | 1740 |
| cgtatctaca cctcgctgct ggacgagtgc gcctgcgcg attttatcct gccaaccac | 1800 |
| tacagcaaag gtacgacggt gcccggaaacg aatagcggtt ctgtgtcacc taacgctgct | 1860 |
| atcatctcta ccggccgtgt gcccggcgac gcgggttctg tggcggctat gttcagatg | 1920 |
| tcgcccgcct tgcaatctgc gccgtccagt caggacggcg tttcaccgg ctccggcagt | 1980 |
| aacagtagta gcagcgtcgg cgtttcagc gtcggctccg gcagtagtgg cggcgtcggc | 2040 |
| gtttccaacg acaatcacgg cgcggccgt actgcggcgg tttcgtacca gggcgccacg | 2100 |
| gtgtttgagc ccgaggtggg ttactacaac gaccccggtt ccgtgttcga ctttgcgcagc | 2160 |
| ctctaccctt ccatcatcat gcccacaac ctctgctact ccaccctgct ggtgccgggt | 2220 |
| ggcgagtacc ctgtggaccc cggcgcgtca tacagcgtca cgctagagaa cggcgtgacc | 2280 |
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| gtttcgcagc ggcgtgccgt ggcgaaatgc atgcgcgagt gtcaagaccc tgcgcgcgt | 2400 |
| atgctgctcg acaaggaaca gatggcgctc aaagtaacgt gcaacgcttt ctacggtttt | 2460 |
| accggcgcgc tgaacggtat gatgccgtgt ctgcccattcg ccgcccacat cacgcgcac | 2520 |
| ggtcgcgaca tgctagagcg cacggcgcgg ttcatcaaag acaactttc agagccgtgt | 2580 |

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|------------|-------------|------------|-------------|------------|------------|------|
| tttttgcaca | attttttaa | tcaggaagac | tatgttagtgg | gaacgcggga | gggggattcg | 2640 |
| gaggagagca | gcgcgttacc | ggaggggctc | gaaacatcg | cagggggctc | gaacgaacgg | 2700 |
| cgggtggagg | cgcgggtcat | ctacggggac | acggacagcg | tgtttgtccg | cttcgtggc | 2760 |
| ctgacgccgc | aggctctgg | ggcgcgtgg | cccagcctgg | cgcactacgt | gacggcctgt | 2820 |
| cttttgtgg | agcccgtcaa | gctggagttt | gaaaaggct | tcgtctctct | tatgatgatc | 2880 |
| tgcaagaaac | gttacatcg | caaagtggag | ggcgcctcg | gtctgagcat | gaagggcgtg | 2940 |
| gatctggtgc | gcaagacggc | ctgcgagttc | gtcaagggcg | tcacgcgtga | cgtcctctcg | 3000 |
| ctgctcttg | aggatcgcga | ggtctcgaa | gcagccgtgc | gcctgtcg | cctctcactc | 3060 |
| gatgaagtca | agaagtacgg | cgtgccacgc | ggtttctggc | gtatcttacg | ccgcttggtg | 3120 |
| cagggccg | acgatctgt | cctgcaccgt | gtgcgtgtcg | aggacctgg | gcttcgtcg | 3180 |
| gtgctctcta | aggacatctc | gctgtaccgt | caatctaacc | tgccgcacat | tgccgtcatt | 3240 |
| aagcgattgg | cggcccg | tgaggagcta | ccctcggtcg | ggatcggt | ctttacgtt | 3300 |
| ctgacggcgc | ccgggtgtccg | gacggcgccg | cagggttcct | ccgacaacgg | tgattctgt | 3360 |
| accgcccgg | tggtttccc | gtcggacgcg | attgatggca | cgacgcacga | cgctgacggc | 3420 |
| ggcggggtag | aggagagcaa | caggagagga | ggagagccgg | caaagaagag | ggcgcggaaa | 3480 |
| ccaccgtcg | ccgtgtgca | ctacgaggta | gccgaagatc | cgagctacgt | gcgcgagcac | 3540 |
| ggcgtgccc | ttcacgccc | caagtactt | gagcagg | tcaaggctgt | aactaacgt | 3600 |
| ctgtcgccc | tctttcccg | cgcgaaacc | gcgcgaagg | acaagtttt | gcacatgg | 3660 |
| ctgcccggc | gcttgcactt | ggagccgg | tttctgcgt | acagtgtcaa | ggcgcacgaa | 3720 |
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<210> 12
 <211> 1242
 <212> PRT
 <213> herpes simplex

<400> 12

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Phe | Phe | Asn | Pro | Tyr | Leu | Ser | Gly | Gly | Val | Thr | Gly | Gly | Ala | Val |
| 1 | | | | | | | | | | | | | | | |
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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Gly | Gly | Arg | Arg | Gln | Arg | Ser | Gln | Pro | Gly | Ser | Ala | Gln | Gly | Ser |
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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Lys | Arg | Pro | Pro | Gln | Lys | Gln | Phe | Leu | Gln | Ile | Val | Pro | Arg | Gly |
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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Met | Phe | Asp | Gly | Gln | Thr | Gly | Leu | Ile | Lys | His | Lys | Thr | Gly | Arg |
| | | | | | | | | | | | | | | | |
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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Pro | Leu | Met | Phe | Tyr | Arg | Glu | Ile | Lys | His | Leu | Leu | Ser | His | Asp |
| | | | | | | | | | | | | | | | |
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|---|-----|-----|-----|-----|
| Met Val Trp Pro Cys Pro Trp Arg Glu Thr Leu Val Gly Arg Val Val | 85 | 90 | 95 | |
| Gly Pro Ile Arg Phe His Thr Tyr Asp Gln Thr Asp Ala Val Leu Phe | 100 | 105 | 110 | |
| Phe Asp Ser Pro Glu Asn Val Ser Pro Arg Tyr Arg Gln His Leu Val | 115 | 120 | 125 | |
| Pro Ser Gly Asn Val Leu Arg Phe Phe Gly Ala Thr Glu His Gly Tyr | 130 | 135 | 140 | |
| Ser Ile Cys Val Asn Val Phe Gly Gln Arg Ser Tyr Phe Tyr Cys Glu | 145 | 150 | 155 | 160 |
| Tyr Ser Asp Thr Asp Arg Leu Arg Glu Val Ile Ala Ser Val Gly Glu | 165 | 170 | 175 | |
| Leu Val Pro Glu Pro Arg Thr Pro Tyr Ala Val Ser Val Thr Pro Ala | 180 | 185 | 190 | |
| Thr Lys Thr Ser Ile Tyr Gly Tyr Gly Thr Arg Pro Val Pro Asp Leu | 195 | 200 | 205 | |
| Gln Cys Val Ser Ile Ser Asn Trp Thr Met Ala Arg Lys Ile Gly Glu | 210 | 215 | 220 | |
| Tyr Leu Leu Glu Gln Gly Phe Pro Val Tyr Glu Val Arg Val Asp Pro | 225 | 230 | 235 | 240 |
| Leu Thr Arg Leu Val Ile Asp Arg Arg Ile Thr Thr Phe Gly Trp Cys | 245 | 250 | 255 | |
| Ser Val Asn Arg Tyr Asp Trp Arg Gln Gln Gly Arg Ala Ser Thr Cys | 260 | 265 | 270 | |
| Asp Ile Glu Val Asp Cys Asp Val Ser Asp Leu Val Ala Val Pro Asp | 275 | 280 | 285 | |
| Asp Ser Ser Trp Pro Arg Tyr Arg Cys Leu Ser Phe Asp Ile Glu Cys | 290 | 295 | 300 | |
| Met Ser Gly Glu Gly Gly Phe Pro Cys Ala Glu Lys Ser Asp Asp Ile | 305 | 310 | 315 | 320 |
| Val Ile Gln Ile Ser Cys Val Cys Tyr Glu Thr Gly Gly Asn Thr Ala | 325 | 330 | 335 | |
| Val Asp Gln Gly Ile Pro Asn Gly Asn Asp Gly Arg Gly Cys Thr Ser | 340 | 345 | 350 | |
| Glu Gly Val Ile Phe Gly His Ser Gly Leu His Leu Phe Thr Ile Gly | 355 | 360 | 365 | |
| Thr Cys Gly Gln Val Gly Pro Asp Val Asp Val Tyr Glu Phe Pro Ser | 370 | 375 | 380 | |
| Glu Tyr Glu Leu Leu Leu Gly Phe Met Leu Phe Phe Gln Arg Tyr Ala | 385 | 390 | 395 | 400 |
| Pro Ala Phe Val Thr Gly Tyr Asn Ile Asn Ser Phe Asp Leu Lys Tyr | | | | |

| 405 | 410 | 415 |
|---|-----|-----|
| Ile Leu Thr Arg Leu Glu Tyr Leu Tyr Lys Val Asp Ser Gln Arg Phe | | |
| 420 | 425 | 430 |
| Cys Lys Leu Pro Thr Ala Gln Gly Gly Arg Phe Phe Leu His Ser Pro | | |
| 435 | 440 | 445 |
| Ala Val Gly Phe Lys Arg Gln Tyr Ala Ala Ala Phe Pro Ser Ala Ser | | |
| 450 | 455 | 460 |
| His Asn Asn Pro Ala Ser Thr Ala Ala Thr Lys Val Tyr Ile Ala Gly | | |
| 465 | 470 | 475 |
| Ser Val Val Ile Asp Met Tyr Pro Val Cys Met Ala Lys Thr Asn Ser | | |
| 485 | 490 | 495 |
| Pro Asn Tyr Lys Leu Asn Thr Met Ala Glu Leu Tyr Leu Arg Gln Arg | | |
| 500 | 505 | 510 |
| Lys Asp Asp Leu Ser Tyr Lys Asp Ile Pro Arg Cys Phe Val Ala Asn | | |
| 515 | 520 | 525 |
| Ala Glu Gly Arg Ala Gln Val Gly Arg Tyr Cys Leu Gln Asp Ala Val | | |
| 530 | 535 | 540 |
| Leu Val Arg Asp Leu Phe Asn Thr Ile Asn Phe His Tyr Glu Ala Gly | | |
| 545 | 550 | 555 |
| Ala Ile Ala Arg Leu Ala Lys Ile Pro Leu Arg Arg Val Ile Phe Asp | | |
| 565 | 570 | 575 |
| Gly Gln Gln Ile Arg Ile Tyr Thr Ser Leu Leu Asp Glu Cys Ala Cys | | |
| 580 | 585 | 590 |
| Arg Asp Phe Ile Leu Pro Asn His Tyr Ser Lys Gly Thr Thr Val Pro | | |
| 595 | 600 | 605 |
| Glu Thr Asn Ser Val Ala Val Ser Pro Asn Ala Ala Ile Ile Ser Thr | | |
| 610 | 615 | 620 |
| Ala Ala Val Pro Gly Asp Ala Gly Ser Val Ala Ala Met Phe Gln Met | | |
| 625 | 630 | 635 |
| Ser Pro Pro Leu Gln Ser Ala Pro Ser Ser Gln Asp Gly Val Ser Pro | | |
| 645 | 650 | 655 |
| Gly Ser Gly Ser Asn Ser Ser Ser Val Gly Val Phe Ser Val Gly | | |
| 660 | 665 | 670 |
| Ser Gly Ser Ser Gly Gly Val Gly Val Ser Asn Asp Asn His Gly Ala | | |
| 675 | 680 | 685 |
| Gly Gly Thr Ala Ala Val Ser Tyr Gln Gly Ala Thr Val Phe Glu Pro | | |
| 690 | 695 | 700 |
| Glu Val Gly Tyr Tyr Asn Asp Pro Val Ala Val Phe Asp Phe Ala Ser | | |
| 705 | 710 | 715 |
| Leu Tyr Pro Ser Ile Ile Met Ala His Asn Leu Cys Tyr Ser Thr Leu | | |
| 725 | 730 | 735 |

Leu Val Pro Gly Gly Glu Tyr Pro Val Asp Pro Ala Asp Val Tyr Ser
 740 745 750
 Val Thr Leu Glu Asn Gly Val Thr His Arg Phe Val Arg Ala Ser Val
 755 760 765
 Arg Val Ser Val Leu Ser Glu Leu Leu Asn Lys Trp Val Ser Gln Arg
 770 775 780
 Arg Ala Val Arg Glu Cys Met Arg Glu Cys Gln Asp Pro Val Arg Arg
 785 790 795 800
 Met Leu Leu Asp Lys Glu Gln Met Ala Leu Lys Val Thr Cys Asn Ala
 805 810 815
 Phe Tyr Gly Phe Thr Gly Ala Leu Asn Gly Met Met Pro Cys Leu Pro
 820 825 830
 Ile Ala Ala Ser Ile Thr Arg Ile Gly Arg Asp Met Leu Glu Arg Thr
 835 840 845
 Ala Arg Phe Ile Lys Asp Asn Phe Ser Glu Pro Cys Phe Leu His Asn
 850 855 860
 Phe Phe Asn Gln Glu Asp Tyr Val Val Gly Thr Arg Glu Gly Asp Ser
 865 870 875 880
 Glu Glu Ser Ser Ala Leu Pro Glu Gly Leu Glu Thr Ser Ser Gly Gly
 885 890 895
 Ser Asn Glu Arg Arg Val Glu Ala Arg Val Ile Tyr Gly Asp Thr Asp
 900 905 910
 Ser Val Phe Val Arg Phe Arg Gly Leu Thr Pro Gln Ala Leu Val Ala
 915 920 925
 Arg Gly Pro Ser Leu Ala His Tyr Val Thr Ala Cys Leu Phe Val Glu
 930 935 940
 Pro Val Lys Leu Glu Phe Glu Lys Val Phe Val Ser Leu Met Met Ile
 945 950 955 960
 Cys Lys Lys Arg Tyr Ile Gly Lys Val Glu Gly Ala Ser Gly Leu Ser
 965 970 975
 Met Lys Gly Val Asp Leu Val Arg Lys Thr Ala Cys Glu Phe Val Lys
 980 985 990
 Gly Val Thr Arg Asp Val Leu Ser Leu Leu Phe Glu Asp Arg Glu Val
 995 1000 1005
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 Glu Asp Leu Val Leu Ser Ser Val Leu Ser Lys Asp Ile Ser Leu
 1055 1060 1065

Tyr Arg Gln Ser Asn Leu Pro His Ile Ala Val Ile Lys Arg Leu
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 Tyr Val Leu Thr Ala Pro Gly Val Arg Thr Ala Pro Gln Gly Ser
 1100 1105 1110
 Ser Asp Asn Gly Asp Ser Val Thr Ala Gly Val Val Ser Arg Ser
 1115 1120 1125
 Asp Ala Ile Asp Gly Thr Asp Asp Asp Ala Asp Gly Gly Gly Val
 1130 1135 1140
 Glu Glu Ser Asn Arg Arg Gly Gly Glu Pro Ala Lys Lys Arg Ala
 1145 1150 1155
 Arg Lys Pro Pro Ser Ala Val Cys Asn Tyr Glu Val Ala Glu Asp
 1160 1165 1170
 Pro Ser Tyr Val Arg Glu His Gly Val Pro Ile His Ala Asp Lys
 1175 1180 1185
 Tyr Phe Glu Gln Val Leu Lys Ala Val Thr Asn Val Leu Ser Pro
 1190 1195 1200
 Val Phe Pro Gly Gly Glu Thr Ala Arg Lys Asp Lys Phe Leu His
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 Tyr Ser Val Lys Ala His Glu Cys Cys
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 35 40 45
 Val Met Phe Asp Gly Gln Thr Gly Leu Ile Lys His Lys Thr Gly Arg
 50 55 60
 Leu Pro Leu Met Phe Tyr Arg Glu Ile Lys His Leu Leu Ser His Asp
 65 70 75 80
 Met Val Trp Pro Cys Pro Trp Arg Glu Thr Leu Val Gly Arg Val Val
 85 90 95

Gly Pro Ile Arg Phe His Thr Tyr Asp Gln Thr Asp Ala Val Leu Phe
 100 105 110
 Phe Asp Ser Pro Glu Asn Val Ser Pro Arg Tyr Arg Gln His Leu Val
 115 120 125
 Pro Ser Gly Asn Val Leu Arg Phe Phe Gly Ala Thr Glu His Gly Tyr
 130 135 140
 Ser Ile Cys Val Asn Val Phe Gly Gln Arg Ser Tyr Phe Tyr Cys Glu
 145 150 155 160
 Tyr Ser Asp Thr Asp Arg Leu Arg Glu Val Ile Ala Ser Val Gly Glu
 165 170 175
 Leu Val Pro Glu Pro Arg Thr Pro Tyr Ala Val Ser Val Thr Pro Ala
 180 185 190
 Thr Lys Thr Ser Ile Tyr Gly Tyr Gly Thr Arg Pro Val Pro Asp Leu
 195 200 205
 Gln Cys Val Ser Ile Ser Asn Trp Thr Met Ala Arg Lys Ile Gly Glu
 210 215 220
 Tyr Leu Leu Glu Gln Gly Phe Pro Val Tyr Glu Val Arg Val Asp Pro
 225 230 235 240
 Leu Thr Arg Leu Val Ile Asp Arg Arg Ile Thr Thr Phe Gly Trp Cys
 245 250 255
 Ser Val Asn Arg Tyr Asp Trp Arg Gln Gln Gly Arg Ala Ser Thr Cys
 260 265 270
 Asp Ile Glu Val Asp Cys Asp Val Ser Asp Leu Val Ala Val Pro Asp
 275 280 285
 Asp Ser Ser Trp Pro Arg Tyr Arg Cys Leu Ser Phe Asp Ile Glu Cys
 290 295 300
 Met Ser Gly Glu Gly Gly Phe Pro Cys Ala Glu Lys Ser Asp Asp Ile
 305 310 315 320
 Val Ile Gln Ile Ser Cys Val Cys Tyr Glu Thr Gly Gly Asn Thr Ala
 325 330 335
 Val Asp Gln Gly Ile Pro Asn Gly Asn Asp Gly Arg Gly Cys Thr Ser
 340 345 350
 Glu Gly Val Ile Phe Gly His Ser Gly Leu His Leu Phe Thr Ile Gly
 355 360 365
 Thr Cys Gly Gln Val Gly Pro Asp Val Asp Val Tyr Glu Phe Pro Ser
 370 375 380
 Glu Tyr Glu Leu Leu Gly Phe Met Leu Phe Phe Gln Arg Tyr Ala
 385 390 395 400
 Pro Ala Phe Val Thr Gly Tyr Asn Ile Asn Ser Phe Asp Leu Lys Tyr
 405 410 415
 Ile Leu Thr Arg Leu Glu Tyr Leu Tyr Lys Val Asp Ser Gln Arg Phe
 420 425 430

Cys Lys Leu Pro Thr Ala Gln Gly Gly Arg Phe Phe Leu His Ser Pro
 435 440 445
 Ala Val Gly Phe Lys Arg Gln Tyr Ala Ala Ala Phe Pro Ser Ala Ser
 450 455 460
 His Asn Asn Pro Ala Ser Thr Ala Ala Thr Lys Val Tyr Ile Ala Gly
 465 470 475 480
 Ser Val Val Ile Asp Met Tyr Pro Val Cys Met Ala Lys Thr Asn Ser
 485 490 495
 Pro Asn Tyr Lys Leu Asn Thr Met Ala Glu Leu Tyr Leu Arg Gln Arg
 500 505 510
 Lys Asp Asp Leu Ser Tyr Lys Asp Ile Pro Arg Cys Phe Val Ala Asn
 515 520 525
 Ala Glu Gly Arg Ala Gln Val Gly Arg Tyr Cys Leu Gln Asp Ala Val
 530 535 540
 Leu Val Arg Asp Leu Phe Asn Thr Ile Asn Phe His Tyr Glu Ala Gly
 545 550 555 560
 Ala Ile Ala Arg Leu Ala Lys Ile Pro Leu Arg Arg Val Ile Phe Asp
 565 570 575
 Gly Gln Gln Ile Arg Ile Tyr Thr Ser Leu Leu Asp Glu Cys Ala Cys
 580 585 590
 Arg Asp Phe Ile Leu Pro Asn His Tyr Ser Lys Gly Thr Thr Val Pro
 595 600 605
 Glu Thr Asn Ser Val Ala Val Ser Pro Asn Ala Ala Ile Ile Ser Thr
 610 615 620
 Ala Ala Val Pro Gly Asp Ala Gly Ser Val Ala Ala Met Phe Gln Met
 625 630 635 640
 Ser Pro Pro Leu Gln Ser Ala Pro Ser Ser Gln Asp Gly Val Ser Pro
 645 650 655
 Gly Ser Gly Ser Asn Ser Ser Ser Val Gly Val Phe Ser Val Gly
 660 665 670
 Ser Gly Ser Ser Gly Val Gly Val Ser Asn Asp Asn His Gly Ala
 675 680 685
 Gly Gly Thr Ala Ala Val Ser Tyr Gln Gly Ala Thr Val Phe Glu Pro
 690 695 700
 Glu Val Gly Tyr Tyr Asn Asp Pro Val Ala Val Phe Asp Phe Ala Ser
 705 710 715 720
 Leu Tyr Pro Ser Ile Ile Met Ala His Asn Leu Cys Tyr Ser Thr Leu
 725 730 735
 Leu Val Pro Gly Gly Glu Tyr Pro Val Asp Pro Ala Asp Val Tyr Ser
 740 745 750
 Val Thr Leu Glu Asn Gly Val Thr His Arg Phe Val Arg Ala Ser Val

| 755 | 760 | 765 |
|---|------|------|
| Arg Val Ser Val Leu Ser Glu Leu Leu Asn Lys Trp Val Ser Gln Arg | | |
| 770 | 775 | 780 |
| Arg Ala Val Arg Glu Cys Met Arg Glu Cys Gln Asp Pro Val Arg Arg | | |
| 785 | 790 | 800 |
| Met Leu Leu Asp Lys Glu Gln Met Ala Leu Lys Val Thr Cys Asn Ala | | |
| 805 | 810 | 815 |
| Phe Tyr Gly Phe Thr Gly Val Val Asn Gly Met Met Pro Cys Leu Pro | | |
| 820 | 825 | 830 |
| Ile Ala Ala Ser Ile Thr Arg Ile Gly Arg Asp Met Leu Glu Arg Thr | | |
| 835 | 840 | 845 |
| Ala Arg Phe Ile Lys Asp Asn Phe Ser Glu Pro Cys Phe Leu His Asn | | |
| 850 | 855 | 860 |
| Phe Phe Asn Gln Glu Asp Tyr Val Val Gly Thr Arg Glu Gly Asp Ser | | |
| 865 | 870 | 880 |
| Glu Glu Ser Ser Ala Leu Pro Glu Gly Leu Glu Thr Ser Ser Gly Gly | | |
| 885 | 890 | 895 |
| Ser Asn Glu Arg Arg Val Glu Ala Arg Val Ile Tyr Gly Asp Thr Asp | | |
| 900 | 905 | 910 |
| Ser Val Phe Val Arg Phe Arg Gly Leu Thr Pro Gln Ala Leu Val Ala | | |
| 915 | 920 | 925 |
| Arg Gly Pro Ser Leu Ala His Tyr Val Thr Ala Cys Leu Phe Val Glu | | |
| 930 | 935 | 940 |
| Pro Val Lys Leu Glu Phe Glu Lys Val Phe Val Ser Leu Met Met Ile | | |
| 945 | 950 | 960 |
| Cys Lys Lys Arg Tyr Ile Gly Lys Val Glu Gly Ala Ser Gly Leu Ser | | |
| 965 | 970 | 975 |
| Met Lys Gly Val Asp Leu Val Arg Lys Thr Ala Cys Glu Phe Val Lys | | |
| 980 | 985 | 990 |
| Gly Val Thr Arg Asp Val Leu Ser Leu Leu Phe Glu Asp Arg Glu Val | | |
| 995 | 1000 | 1005 |
| Ser Glu Ala Ala Val Arg Leu Ser Arg Leu Ser Leu Asp Glu Val | | |
| 1010 | 1015 | 1020 |
| Lys Lys Tyr Gly Val Pro Arg Gly Phe Trp Arg Ile Leu Arg Arg | | |
| 1025 | 1030 | 1035 |
| Leu Val Gln Ala Arg Asp Asp Leu Tyr Leu His Arg Val Arg Val | | |
| 1040 | 1045 | 1050 |
| Glu Asp Leu Val Leu Ser Ser Val Leu Ser Lys Asp Ile Ser Leu | | |
| 1055 | 1060 | 1065 |
| Tyr Arg Gln Ser Asn Leu Pro His Ile Ala Val Ile Lys Arg Leu | | |
| 1070 | 1075 | 1080 |

Ala Ala Arg Ser Glu Glu Leu Pro Ser Val Gly Asp Arg Val Phe
 1085 1090 1095
 Tyr Val Leu Thr Ala Pro Gly Val Arg Thr Ala Pro Gln Gly Ser
 1100 1105 1110
 Ser Asp Asn Gly Asp Ser Val Thr Ala Gly Val Val Ser Arg Ser
 1115 1120 1125
 Asp Ala Ile Asp Gly Thr Asp Asp Ala Asp Gly Gly Gly Val
 1130 1135 1140
 Glu Glu Ser Asn Arg Arg Gly Gly Glu Pro Ala Lys Lys Arg Ala
 1145 1150 1155
 Arg Lys Pro Pro Ser Ala Val Cys Asn Tyr Glu Val Ala Glu Asp
 1160 1165 1170
 Pro Ser Tyr Val Arg Glu His Gly Val Pro Ile His Ala Asp Lys
 1175 1180 1185
 Tyr Phe Glu Gln Val Leu Lys Ala Val Thr Asn Val Leu Ser Pro
 1190 1195 1200
 Val Phe Pro Gly Gly Glu Thr Ala Arg Lys Asp Lys Phe Leu His
 1205 1210 1215
 Met Val Leu Pro Arg Arg Leu His Leu Glu Pro Ala Phe Leu Pro
 1220 1225 1230
 Tyr Ser Val Lys Ala His Glu Cys Cys
 1235 1240
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 <211> 1238
 <212> PRT
 <213> herpes simplex
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 Ala Arg Ala Ala Ser Gly Phe Phe Ala Pro His Asn Pro Arg Gly Ala
 20 25 30
 Thr Gln Thr Ala Pro Pro Cys Arg Arg Gln Asn Phe Tyr Asn Pro
 35 40 45
 His Leu Ala Gln Thr Gly Thr Gln Pro Lys Ala Pro Gly Pro Ala Gln
 50 55 60
 Arg His Thr Tyr Tyr Ser Glu Cys Asp Glu Phe Arg Phe Ile Ala Pro
 65 70 75 80
 Arg Ser Leu Asp Glu Asp Ala Pro Ala Glu Gln Arg Thr Gly Val His
 85 90 95
 Asp Gly Arg Leu Arg Arg Ala Pro Lys Val Tyr Cys Gly Gly Asp Glu
 100 105 110
 Arg Asp Val Leu Arg Val Gly Pro Glu Gly Phe Trp Pro Arg Arg Leu

| 115 | 120 | 125 |
|---|-----|-----|
| Arg Leu Trp Gly Gly Ala Asp His Ala Pro Lys Gly Phe Asp Pro Thr | | |
| 130 | 135 | 140 |
| Val Thr Val Phe His Val Tyr Asp Ile Leu Glu His Val Glu His Ala | | |
| 145 | 150 | 155 |
| Tyr Ser Met Arg Ala Ala Gln Leu His Glu Arg Phe Met Asp Ala Ile | | |
| 165 | 170 | 175 |
| Thr Pro Ala Gly Thr Val Ile Thr Leu Leu Gly Leu Thr Pro Glu Gly | | |
| 180 | 185 | 190 |
| His Arg Val Ala Val His Val Tyr Gly Thr Arg Gln Tyr Phe Tyr Met | | |
| 195 | 200 | 205 |
| Asn Lys Ala Glu Val Asp Arg His Leu Gln Cys Arg Ala Pro Arg Asp | | |
| 210 | 215 | 220 |
| Leu Cys Glu Arg Leu Ala Ala Leu Arg Glu Ser Pro Gly Ala Ser | | |
| 225 | 230 | 240 |
| Phe Arg Gly Ile Ser Ala Asp His Phe Glu Ala Glu Val Val Glu Arg | | |
| 245 | 250 | 255 |
| Ala Asp Val Tyr Tyr Tyr Glu Thr Arg Pro Thr Leu Tyr Tyr Arg Val | | |
| 260 | 265 | 270 |
| Phe Val Arg Ser Gly Arg Ala Leu Ala Tyr Leu Cys Asp Asn Phe Cys | | |
| 275 | 280 | 285 |
| Pro Ala Ile Arg Lys Tyr Glu Gly Gly Val Asp Ala Thr Thr Arg Phe | | |
| 290 | 295 | 300 |
| Ile Leu Asp Asn Pro Gly Phe Val Thr Phe Gly Trp Tyr Arg Leu Lys | | |
| 305 | 310 | 320 |
| Pro Gly Arg Gly Asn Ala Pro Ala Gln Pro Arg Pro Pro Thr Ala Phe | | |
| 325 | 330 | 335 |
| Gly Thr Ser Ser Asp Val Glu Phe Asn Cys Thr Ala Asp Asn Leu Ala | | |
| 340 | 345 | 350 |
| Val Glu Gly Ala Met Cys Asp Leu Pro Ala Tyr Lys Leu Met Cys Phe | | |
| 355 | 360 | 365 |
| Asp Ile Glu Cys Lys Ala Gly Gly Glu Asp Glu Leu Ala Phe Pro Val | | |
| 370 | 375 | 380 |
| Ala Glu Arg Pro Glu Asp Leu Val Ile Gln Ile Ser Cys Leu Leu Tyr | | |
| 385 | 390 | 400 |
| Asp Leu Ser Thr Thr Ala Leu Glu His Ile Leu Leu Phe Ser Leu Gly | | |
| 405 | 410 | 415 |
| Ser Cys Asp Leu Pro Glu Ser His Leu Ser Asp Leu Ala Ser Arg Gly | | |
| 420 | 425 | 430 |
| Leu Pro Ala Pro Val Val Leu Glu Phe Asp Ser Glu Phe Glu Met Leu | | |
| 435 | 440 | 445 |

Leu Ala Phe Met Thr Phe Val Lys Gln Tyr Gly Pro Glu Phe Val Thr
 450 455 460
 Gly Tyr Asn Ile Ile Asn Phe Asp Trp Pro Phe Val Leu Thr Lys Leu
 465 470 475 480
 Thr Glu Ile Tyr Lys Val Pro Leu Asp Gly Tyr Gly Arg Met Asn Gly
 485 490 495
 Arg Gly Val Phe Arg Val Trp Asp Ile Gly Gln Ser His Phe Gln Lys
 500 505 510
 Arg Ser Lys Ile Lys Val Asn Gly Met Val Asn Ile Asp Met Tyr Gly
 515 520 525
 Ile Ile Thr Asp Lys Val Lys Leu Ser Ser Tyr Lys Leu Asn Ala Val
 530 535 540
 Ala Glu Ala Val Leu Lys Asp Lys Lys Asp Leu Ser Tyr Arg Asp
 545 550 555 560
 Ile Pro Ala Tyr Tyr Ala Ser Gly Pro Ala Gln Arg Gly Val Ile Gly
 565 570 575
 Glu Tyr Cys Val Gln Asp Ser Leu Leu Val Gly Gln Leu Phe Phe Lys
 580 585 590
 Phe Leu Pro His Leu Glu Leu Ser Ala Val Ala Arg Leu Ala Gly Ile
 595 600 605
 Asn Ile Thr Arg Thr Ile Tyr Asp Gly Gln Gln Ile Arg Val Phe Thr
 610 615 620
 Cys Leu Leu Arg Leu Ala Gly Gln Lys Gly Phe Ile Leu Pro Asp Thr
 625 630 635 640
 Gln Gly Arg Phe Arg Gly Leu Asp Lys Glu Ala Pro Lys Arg Pro Ala
 645 650 655
 Val Pro Arg Gly Glu Gly Glu Arg Pro Gly Asp Gly Asn Gly Asp Glu
 660 665 670
 Asp Lys Asp Asp Asp Glu Asp Glu Asp Gly Asp Glu Arg Glu Glu Val
 675 680 685
 Ala Arg Glu Thr Gly Gly Arg His Val Gly Tyr Gln Gly Ala Arg Val
 690 695 700
 Leu Asp Pro Thr Ser Gly Phe His Val Asp Pro Val Val Val Phe Asp
 705 710 715 720
 Phe Ala Ser Leu Tyr Pro Ser Ile Ile Gln Ala His Asn Leu Cys Phe
 725 730 735
 Ser Thr Leu Ser Leu Arg Pro Glu Ala Val Ala His Leu Glu Ala Asp
 740 745 750
 Arg Asp Tyr Leu Glu Ile Glu Val Gly Gly Arg Arg Leu Phe Phe Val
 755 760 765
 Lys Ala His Val Arg Glu Ser Leu Leu Ser Ile Leu Leu Arg Asp Trp
 770 775 780

Leu Ala Met Arg Lys Gln Ile Arg Ser Arg Ile Pro Gln Ser Thr Pro
 785 790 795 800
 Glu Glu Ala Val Leu Leu Asp Lys Gln Gln Ala Ala Ile Lys Val Val
 805 810 815
 Cys Asn Ser Val Tyr Gly Phe Thr Gly Val Gln His Gly Leu Leu Pro
 820 825 830
 Cys Leu His Val Ala Ala Thr Val Thr Thr Ile Gly Arg Glu Met Leu
 835 840 845
 Leu Ala Thr Arg Ala Tyr Val His Ala Arg Trp Ala Glu Phe Asp Gln
 850 855 860
 Leu Leu Ala Asp Phe Pro Glu Ala Ala Gly Met Arg Ala Pro Gly Pro
 865 870 875 880
 Tyr Ser Met Arg Ile Ile Tyr Gly Asp Thr Asp Ser Ile Phe Val Leu
 885 890 895
 Cys Arg Gly Leu Thr Ala Ala Gly Leu Val Ala Met Gly Asp Lys Met
 900 905 910
 Ala Ser His Ile Ser Arg Ala Leu Phe Leu Pro Pro Ile Lys Leu Glu
 915 920 925
 Cys Glu Lys Thr Phe Thr Lys Leu Leu Leu Ile Ala Lys Lys Tyr
 930 935 940
 Ile Gly Val Ile Cys Gly Gly Lys Met Leu Ile Lys Gly Val Asp Leu
 945 950 955 960
 Val Arg Lys Asn Asn Cys Ala Phe Ile Asn Arg Thr Ser Arg Ala Leu
 965 970 975
 Val Asp Leu Leu Phe Tyr Asp Asp Thr Val Ser Gly Ala Ala Ala
 980 985 990
 Leu Ala Glu Arg Pro Ala Glu Glu Trp Leu Ala Arg Pro Leu Pro Glu
 995 1000 1005
 Gly Leu Gln Ala Phe Gly Ala Val Leu Val Asp Ala His Arg Arg
 1010 1015 1020
 Ile Thr Asp Pro Glu Arg Asp Ile Gln Asp Phe Val Leu Thr Ala
 1025 1030 1035
 Glu Leu Ser Arg His Pro Arg Ala Tyr Thr Asn Lys Arg Leu Ala
 1040 1045 1050
 His Leu Thr Val Tyr Tyr Lys Leu Met Ala Arg Arg Ala Gln Val
 1055 1060 1065
 Pro Ser Ile Lys Asp Arg Ile Pro Tyr Val Ile Val Ala Gln Thr
 1070 1075 1080
 Arg Glu Val Glu Glu Thr Val Ala Arg Leu Ala Ala Leu Arg Glu
 1085 1090 1095
 Leu Asp Ala Ala Ala Pro Gly Asp Glu Pro Ala Pro Pro Ala Ala

| | | | |
|---|---------------------------------|------|----|
| 1100 | 1105 | 1110 | |
| Leu Pro Ser Pro Ala Lys Arg | Pro Arg Glu Thr Pro Ser His Ala | | |
| 1115 | 1120 | 1125 | |
| Asp Pro Pro Gly Gly Ala Ser | Lys Pro Arg Lys Leu Leu Val Ser | | |
| 1130 | 1135 | 1140 | |
| Glu Leu Ala Glu Asp Pro Gly | Tyr Ala Ile Ala Arg Gly Val Pro | | |
| 1145 | 1150 | 1155 | |
| Leu Asn Thr Asp Tyr Tyr Phe | Ser His Leu Leu Gly Ala Ala Cys | | |
| 1160 | 1165 | 1170 | |
| Val Thr Phe Lys Ala Leu Phe | Gly Asn Asn Ala Lys Ile Thr Glu | | |
| 1175 | 1180 | 1185 | |
| Ser Leu Leu Lys Arg Phe Ile | Pro Glu Thr Trp His Pro Pro Asp | | |
| 1190 | 1195 | 1200 | |
| Asp Val Ala Ala Arg Leu Arg | Ala Ala Gly Phe Gly Pro Ala Gly | | |
| 1205 | 1210 | 1215 | |
| Ala Gly Ala Thr Ala Glu Glu | Thr Arg Arg Met Leu His Arg Ala | | |
| 1220 | 1225 | 1230 | |
| Phe Asp Thr Leu Ala | | | |
| 1235 | | | |
| <210> 15 | | | |
| <211> 1240 | | | |
| <212> PRT | | | |
| <213> herpes simplex | | | |
| <400> 15 | | | |
| Met Phe Cys Ala Ala Gly Gly Pro Ala Ser Pro Gly Gly Lys Ser Ala | | | |
| 1 | 5 | 10 | 15 |
| Ala Arg Ala Ala Ser Gly Phe Phe Ala Pro His Asn Pro Arg Gly Ala | | | |
| 20 | 25 | 30 | |
| Thr Gln Thr Ala Pro Pro Cys Arg Arg Gln Asn Phe Tyr Asn Pro | | | |
| 35 | 40 | 45 | |
| His Leu Ala Gln Thr Gly Thr Gln Pro Lys Ala Pro Gly Pro Ala Gln | | | |
| 50 | 55 | 60 | |
| Arg His Thr Tyr Tyr Ser Glu Cys Asp Glu Phe Arg Phe Ile Ala Pro | | | |
| 65 | 70 | 75 | 80 |
| Arg Ser Leu Asp Glu Asp Ala Pro Ala Glu Gln Arg Thr Gly Val His | | | |
| 85 | 90 | 95 | |
| Asp Gly Arg Leu Arg Arg Ala Pro Lys Val Tyr Cys Gly Gly Asp Glu | | | |
| 100 | 105 | 110 | |
| Arg Asp Val Leu Arg Val Gly Pro Glu Gly Phe Trp Pro Arg Arg Leu | | | |
| 115 | 120 | 125 | |
| Arg Leu Trp Gly Gly Ala Asp His Ala Pro Glu Gly Phe Asp Pro Thr | | | |
| 130 | 135 | 140 | |

Val Thr Val Phe His Val Tyr Asp Ile Leu Glu His Val Glu His Ala
 145 150 155 160
 Tyr Ser Met Arg Ala Ala Gln Leu His Glu Arg Phe Met Asp Ala Ile
 165 170 175
 Thr Pro Ala Gly Thr Val Ile Thr Leu Leu Gly Leu Thr Pro Glu Gly
 180 185 190
 His Arg Val Ala Val His Val Tyr Gly Thr Arg Gln Tyr Phe Tyr Met
 195 200 205
 Asn Lys Ala Glu Val Asp Arg His Leu Gln Cys Arg Ala Pro Arg Asp
 210 215 220
 Leu Cys Glu Arg Leu Ala Ala Leu Arg Glu Ser Pro Gly Ala Ser
 225 230 235 240
 Phe Arg Gly Ile Ser Ala Asp His Phe Glu Ala Glu Val Val Glu Arg
 245 250 255
 Ala Asp Val Tyr Tyr Tyr Glu Thr Arg Pro Thr Leu Tyr Tyr Arg Val
 260 265 270
 Phe Val Arg Ser Gly Arg Ala Leu Ala Tyr Leu Cys Asp Asn Phe Cys
 275 280 285
 Pro Ala Ile Arg Lys Tyr Glu Gly Val Asp Ala Thr Thr Arg Phe
 290 295 300
 Ile Leu Asp Asn Pro Gly Phe Val Thr Phe Gly Trp Tyr Arg Leu Lys
 305 310 315 320
 Pro Gly Arg Gly Asn Ala Pro Ala Gln Pro Arg Pro Pro Thr Ala Phe
 325 330 335
 Gly Thr Ser Ser Asp Val Glu Phe Asn Cys Thr Ala Asp Asn Leu Ala
 340 345 350
 Val Glu Gly Ala Met Cys Asp Leu Pro Ala Tyr Lys Leu Met Cys Phe
 355 360 365
 Asp Ile Glu Cys Lys Ala Gly Gly Glu Asp Glu Leu Ala Phe Pro Val
 370 375 380
 Ala Glu Arg Pro Glu Asp Leu Val Ile Gln Ile Ser Cys Leu Leu Tyr
 385 390 395 400
 Asp Leu Ser Thr Thr Ala Leu Glu His Ile Leu Leu Phe Ser Leu Gly
 405 410 415
 Ser Cys Asp Leu Pro Glu Ser His Leu Ser Asp Leu Ala Ser Arg Gly
 420 425 430
 Leu Pro Ala Pro Val Val Leu Glu Phe Asp Ser Glu Phe Glu Met Leu
 435 440 445
 Leu Ala Phe Met Thr Phe Val Lys Gln Tyr Gly Pro Glu Phe Val Thr
 450 455 460
 Gly Tyr Asn Ile Ile Asn Phe Asp Trp Pro Phe Val Leu Thr Lys Leu

| 465 | 470 | 475 | 480 |
|---|-----|-----|-----|
| Thr Glu Ile Tyr Lys Val Pro Leu Asp Gly Tyr Gly Arg Met Asn Gly | | | |
| 485 | 490 | 495 | |
| Arg Gly Val Phe Arg Val Trp Asp Ile Gly Gln Ser His Phe Gln Lys | | | |
| 500 | 505 | 510 | |
| Arg Ser Lys Ile Lys Val Asn Gly Met Val Asn Ile Asp Met Tyr Gly | | | |
| 515 | 520 | 525 | |
| Ile Ile Thr Asp Lys Val Lys Leu Ser Ser Tyr Lys Leu Asn Ala Val | | | |
| 530 | 535 | 540 | |
| Ala Glu Ala Val Leu Lys Asp Lys Lys Asp Leu Ser Tyr Arg Asp | | | |
| 545 | 550 | 555 | 560 |
| Ile Pro Ala Tyr Tyr Ala Ser Gly Pro Ala Gln Arg Gly Val Ile Gly | | | |
| 565 | 570 | 575 | |
| Glu Tyr Cys Val Gln Asp Ser Leu Leu Val Gly Gln Leu Phe Phe Lys | | | |
| 580 | 585 | 590 | |
| Phe Leu Pro His Leu Glu Leu Ser Ala Val Ala Arg Leu Ala Gly Ile | | | |
| 595 | 600 | 605 | |
| Asn Ile Thr Arg Thr Ile Tyr Asp Gly Gln Gln Ile Arg Val Phe Thr | | | |
| 610 | 615 | 620 | |
| Cys Leu Leu Arg Leu Ala Gly Gln Lys Gly Phe Ile Leu Pro Asp Thr | | | |
| 625 | 630 | 635 | 640 |
| Gln Gly Arg Phe Arg Gly Leu Asp Lys Glu Ala Pro Lys Arg Pro Ala | | | |
| 645 | 650 | 655 | |
| Val Pro Arg Gly Glu Gly Glu Arg Pro Gly Asp Gly Asn Gly Asp Glu | | | |
| 660 | 665 | 670 | |
| Asp Lys Asp Asp Asp Glu Asp Gly Asp Glu Asp Gly Asp Glu Arg Glu | | | |
| 675 | 680 | 685 | |
| Glu Val Ala Arg Glu Thr Gly Gly Arg His Val Gly Tyr Gln Gly Ala | | | |
| 690 | 695 | 700 | |
| Arg Val Leu Asp Pro Thr Ser Gly Phe His Val Asp Pro Val Val Val | | | |
| 705 | 710 | 715 | 720 |
| Phe Asp Phe Ala Ser Leu Tyr Pro Ser Ile Ile Gln Ala His Asn Leu | | | |
| 725 | 730 | 735 | |
| Cys Phe Ser Thr Leu Ser Leu Arg Pro Glu Ala Val Ala His Leu Glu | | | |
| 740 | 745 | 750 | |
| Ala Asp Arg Asp Tyr Leu Glu Ile Glu Val Gly Gly Arg Arg Leu Phe | | | |
| 755 | 760 | 765 | |
| Phe Val Lys Ala His Val Arg Glu Ser Leu Leu Ser Ile Leu Leu Arg | | | |
| 770 | 775 | 780 | |
| Asp Trp Leu Ala Met Arg Lys Gln Ile Arg Ser Arg Ile Pro Gln Ser | | | |
| 785 | 790 | 795 | 800 |

Pro Pro Glu Glu Ala Val Leu Leu Asp Lys Gln Gln Ala Ala Ile Lys
 805 810 815
 Val Val Cys Asn Ser Val Tyr Gly Phe Thr Gly Val Gln His Gly Leu
 820 825 830
 Leu Pro Cys Leu His Val Ala Ala Thr Val Thr Thr Ile Gly Arg Glu
 835 840 845
 Met Leu Leu Ala Thr Arg Ala Tyr Val His Ala Arg Trp Ala Glu Phe
 850 855 860
 Asp Gln Leu Leu Ala Asp Phe Pro Glu Ala Ala Gly Met Arg Ala Pro
 865 870 875 880
 Gly Pro Tyr Ser Met Arg Ile Ile Tyr Gly Asp Thr Asp Ser Ile Phe
 885 890 895
 Val Leu Cys Arg Gly Leu Thr Ala Ala Gly Leu Val Ala Met Gly Asp
 900 905 910
 Lys Met Ala Ser His Ile Ser Arg Ala Leu Phe Leu Pro Pro Ile Lys
 915 920 925
 Leu Glu Cys Glu Lys Thr Phe Thr Lys Leu Leu Leu Ile Ala Lys Lys
 930 935 940
 Lys Tyr Ile Gly Val Ile Cys Gly Gly Lys Met Leu Ile Lys Gly Val
 945 950 955 960
 Asp Leu Val Arg Lys Asn Asn Cys Ala Phe Ile Asn Arg Thr Ser Arg
 965 970 975
 Ala Leu Val Asp Leu Leu Phe Tyr Asp Asp Thr Val Ser Gly Ala Ala
 980 985 990
 Ala Ala Leu Ala Glu Arg Pro Ala Glu Glu Trp Leu Ala Arg Pro Leu
 995 1000 1005
 Pro Glu Gly Leu Gln Ala Phe Gly Ala Val Leu Val Asp Ala His
 1010 1015 1020
 Arg Arg Ile Thr Asp Pro Glu Arg Asp Ile Gln Asp Phe Val Leu
 1025 1030 1035
 Thr Ala Glu Leu Ser Arg His Pro Arg Ala Tyr Thr Asn Lys Arg
 1040 1045 1050
 Leu Ala His Leu Thr Val Tyr Tyr Lys Leu Met Ala Arg Arg Ala
 1055 1060 1065
 Gln Val Pro Ser Ile Lys Asp Arg Ile Pro Tyr Val Ile Val Ala
 1070 1075 1080
 Gln Thr Arg Glu Val Glu Glu Thr Val Ala Arg Leu Ala Ala Leu
 1085 1090 1095
 Arg Glu Leu Asp Ala Ala Pro Gly Asp Glu Pro Ala Pro Pro
 1100 1105 1110
 Ala Ala Leu Pro Ser Pro Ala Lys Arg Pro Arg Glu Thr Pro Ser
 1115 1120 1125

His Ala Asp Pro Pro Gly Gly Ala Ser Lys Pro Arg Lys Leu Leu
 1130 1135 1140
 Val Ser Glu Leu Ala Glu Asp Pro Gly Tyr Ala Ile Ala Arg Gly
 1145 1150 1155
 Val Pro Leu Asn Thr Asp Tyr Tyr Phe Ser His Leu Leu Gly Ala
 1160 1165 1170
 Ala Cys Val Thr Phe Lys Ala Leu Phe Gly Asn Asn Ala Lys Ile
 1175 1180 1185
 Thr Glu Ser Leu Leu Lys Arg Phe Ile Pro Glu Thr Trp His Pro
 1190 1195 1200
 Pro Asp Asp Val Ala Ala Arg Leu Arg Ala Ala Gly Phe Gly Pro
 1205 1210 1215
 Ala Gly Ala Gly Ala Thr Ala Glu Glu Thr Arg Arg Met Leu His
 1220 1225 1230
 Arg Ala Phe Asp Thr Leu Ala
 1235 1240
 <210> 16
 <211> 1235
 <212> PRT
 <213> herpes simplex
 <400> 16
 Met Phe Ser Gly Gly Gly Pro Leu Ser Pro Gly Gly Lys Ser Ala
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 Ala Arg Ala Ala Ser Gly Phe Phe Ala Pro Ala Gly Pro Arg Gly Ala
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 Gly Arg Gly Pro Pro Pro Cys Leu Arg Gln Asn Phe Tyr Asn Pro Tyr
 35 40 45
 Leu Ala Pro Val Gly Thr Gln Gln Lys Pro Thr Gly Pro Thr Gln Arg
 50 55 60
 His Thr Tyr Tyr Ser Glu Cys Asp Glu Phe Arg Phe Ile Ala Pro Arg
 65 70 75 80
 Val Leu Asp Glu Asp Ala Pro Pro Glu Lys Arg Ala Gly Val His Asp
 85 90 95
 Gly His Leu Lys Arg Ala Pro Lys Val Tyr Cys Gly Gly Asp Glu Arg
 100 105 110
 Asp Val Leu Arg Val Gly Ser Gly Gly Phe Trp Pro Arg Arg Ser Arg
 115 120 125
 Leu Trp Gly Gly Val Asp His Ala Pro Ala Gly Phe Asn Pro Thr Val
 130 135 140
 Thr Val Phe His Val Tyr Asp Ile Leu Glu Asn Val Glu His Ala Tyr
 145 150 155 160

Gly Met Arg Ala Ala Gln Phe His Ala Arg Phe Met Asp Ala Ile Thr
 165 170 175
 Pro Thr Gly Thr Val Ile Thr Leu Leu Gly Leu Thr Pro Glu Gly His
 180 185 190
 Arg Val Ala Val His Val Tyr Gly Thr Arg Gln Tyr Phe Tyr Met Asn
 195 200 205
 Lys Glu Glu Val Asp Arg His Leu Gln Cys Arg Ala Pro Arg Asp Leu
 210 215 220
 Cys Glu Arg Met Ala Ala Ala Leu Arg Glu Ser Pro Gly Ala Ser Phe
 225 230 235 240
 Arg Gly Ile Ser Ala Asp His Phe Glu Ala Glu Val Val Glu Arg Thr
 245 250 255
 Asp Val Tyr Tyr Tyr Glu Thr Arg Pro Ala Leu Phe Tyr Arg Val Tyr
 260 265 270
 Val Arg Ser Gly Arg Val Leu Ser Tyr Leu Cys Asp Asn Phe Cys Pro
 275 280 285
 Ala Ile Lys Lys Tyr Glu Gly Gly Val Asp Ala Thr Thr Arg Phe Ile
 290 295 300
 Leu Asp Asn Pro Gly Phe Val Thr Phe Gly Trp Tyr Arg Leu Lys Pro
 305 310 315 320
 Gly Arg Asn Asn Thr Leu Ala Gln Pro Arg Ala Pro Met Ala Phe Gly
 325 330 335
 Thr Ser Ser Asp Val Glu Phe Asn Cys Thr Ala Asp Asn Leu Ala Ile
 340 345 350
 Glu Gly Gly Met Ser Asp Leu Pro Ala Tyr Lys Leu Met Cys Phe Asp
 355 360 365
 Ile Glu Cys Lys Ala Gly Gly Glu Asp Glu Leu Ala Phe Pro Val Ala
 370 375 380
 Gly His Pro Glu Asp Leu Val Ile Gln Ile Ser Cys Leu Leu Tyr Asp
 385 390 395 400
 Leu Ser Thr Thr Ala Leu Glu His Val Leu Leu Phe Ser Leu Gly Ser
 405 410 415
 Cys Asp Leu Pro Glu Ser His Leu Asn Glu Leu Ala Ala Arg Gly Leu
 420 425 430
 Pro Thr Pro Val Val Leu Glu Phe Asp Ser Glu Phe Glu Met Leu Leu
 435 440 445
 Ala Phe Met Thr Leu Val Lys Gln Tyr Gly Pro Glu Phe Val Thr Gly
 450 455 460
 Tyr Asn Ile Ile Asn Phe Asp Trp Pro Phe Leu Leu Ala Lys Leu Thr
 465 470 475 480
 Asp Ile Tyr Lys Val Pro Leu Asp Gly Tyr Gly Arg Met Asn Gly Arg
 485 490 495

Gly Val Phe Arg Val Trp Asp Ile Gly Gln Ser His Phe Gln Lys Arg
 500 505 510
 Ser Lys Ile Lys Val Asn Gly Met Val Asn Ile Asp Met Tyr Gly Ile
 515 520 525
 Ile Thr Asp Lys Ile Lys Leu Ser Ser Tyr Lys Leu Asn Ala Val Ala
 530 535 540
 Glu Ala Val Leu Lys Asp Lys Lys Asp Leu Ser Tyr Arg Asp Ile
 545 550 555 560
 Pro Ala Tyr Tyr Ala Ala Gly Pro Ala Gln Arg Gly Val Ile Gly Glu
 565 570 575
 Tyr Cys Ile Gln Asp Ser Leu Leu Val Gly Gln Leu Phe Phe Lys Phe
 580 585 590
 Leu Pro His Leu Glu Leu Ser Ala Val Ala Arg Leu Ala Gly Ile Asn
 595 600 605
 Ile Thr Arg Thr Ile Tyr Asp Gly Gln Ile Arg Val Phe Thr Cys
 610 615 620
 Leu Leu Arg Leu Ala Asp Gln Lys Gly Phe Ile Leu Pro Asp Thr Gln
 625 630 635 640
 Gly Arg Phe Arg Gly Ala Gly Glu Ala Pro Lys Arg Pro Ala Ala
 645 650 655
 Ala Arg Glu Asp Glu Glu Arg Pro Glu Glu Gly Glu Asp Glu Asp
 660 665 670
 Glu Arg Glu Glu Gly Gly Glu Arg Glu Pro Glu Gly Ala Arg Glu
 675 680 685
 Thr Ala Gly Arg His Val Gly Tyr Gln Gly Ala Arg Val Leu Asp Pro
 690 695 700
 Thr Ser Gly Phe His Val Asn Pro Val Val Phe Asp Phe Ala Ser
 705 710 715 720
 Leu Tyr Pro Ser Ile Ile Gln Ala His Asn Leu Cys Phe Ser Thr Leu
 725 730 735
 Ser Leu Arg Ala Asp Ala Val Ala His Leu Glu Ala Gly Lys Asp Tyr
 740 745 750
 Leu Glu Ile Glu Val Gly Arg Arg Leu Phe Phe Val Lys Ala His
 755 760 765
 Val Arg Glu Ser Leu Leu Ser Ile Leu Leu Arg Asp Trp Leu Ala Met
 770 775 780
 Arg Lys Gln Ile Arg Ser Arg Ile Pro Gln Ser Ser Pro Glu Glu Ala
 785 790 795 800
 Val Leu Leu Asp Lys Gln Gln Ala Ala Ile Lys Val Val Cys Asn Ser
 805 810 815
 Val Tyr Gly Phe Thr Gly Val Gln His Gly Leu Leu Pro Cys Leu His

820

825

830

Val Ala Ala Thr Val Thr Ile Gly Arg Glu Met Leu Leu Ala Thr
 835 840 845

Arg Glu Tyr Val His Ala Arg Trp Ala Ala Phe Glu Gln Leu Leu Ala
 850 855 860

Asp Phe Pro Glu Ala Ala Asp Met Arg Ala Pro Gly Pro Tyr Ser Met
 865 870 875 880

Arg Ile Ile Tyr Gly Asp Thr Asp Ser Ile Phe Val Leu Cys Arg Gly
 885 890 895

Leu Thr Ala Ala Gly Leu Thr Ala Met Gly Asp Lys Met Ala Ser His
 900 905 910

Ile Ser Arg Ala Leu Phe Leu Pro Pro Ile Lys Leu Glu Cys Glu Lys
 915 920 925

Thr Phe Thr Lys Leu Leu Ile Ala Lys Lys Tyr Ile Gly Val
 930 935 940

Ile Tyr Gly Gly Lys Met Leu Ile Lys Gly Val Asp Leu Val Arg Lys
 945 950 955 960

Asn Asn Cys Ala Phe Ile Asn Arg Thr Ser Arg Ala Leu Val Asp Leu
 965 970 975

Leu Phe Tyr Asp Asp Thr Val Ser Gly Ala Ala Ala Leu Ala Glu
 980 985 990

Arg Pro Ala Glu Glu Trp Leu Ala Arg Pro Leu Pro Glu Gly Leu Gln
 995 1000 1005

Ala Phe Gly Ala Val Leu Val Asp Ala His Arg Arg Ile Thr Asp
 1010 1015 1020

Pro Glu Arg Asp Ile Gln Asp Phe Val Leu Thr Ala Glu Leu Ser
 1025 1030 1035

Arg His Pro Arg Ala Tyr Thr Asn Lys Arg Leu Ala His Leu Thr
 1040 1045 1050

Val Tyr Tyr Lys Leu Met Ala Arg Arg Ala Gln Val Pro Ser Ile
 1055 1060 1065

Lys Asp Arg Ile Pro Tyr Val Ile Val Ala Gln Thr Arg Glu Val
 1070 1075 1080

Glu Glu Thr Val Ala Arg Leu Ala Ala Leu Arg Glu Leu Asp Ala
 1085 1090 1095

Ala Ala Pro Gly Asp Glu Pro Ala Pro Pro Ala Ala Leu Pro Ser
 1100 1105 1110

Pro Ala Lys Arg Pro Arg Glu Thr Pro Ser His Ala Asp Pro Pro
 1115 1120 1125

Gly Gly Ala Ser Lys Pro Arg Lys Leu Leu Val Ser Glu Leu Ala
 1130 1135 1140

Glu Asp Pro Ala Tyr Ala Ile Ala His Gly Val Ala Leu Asn Thr
1145 1150 1155

Asp Tyr Tyr Phe Ser His Leu Leu Gly Ala Ala Cys Val Thr Phe
1160 1165 1170

Lys Ala Leu Phe Gly Asn Asn Ala Lys Ile Thr Glu Ser Leu Leu
1175 1180 1185

Lys Arg Phe Ile Pro Glu Val Trp His Pro Pro Asp Asp Val Ala
1190 1195 1200

Ala Arg Leu Arg Ala Ala Gly Phe Gly Ala Val Gly Ala Gly Ala
1205 1210 1215

Thr Ala Glu Glu Thr Arg Arg Met Leu His Arg Ala Phe Asp Thr
1220 1225 1230

Leu Ala
1235

<210> 17

<211> 1235

<212> PRT

<213> herpes simplex

<400> 17

Met Phe Ser Gly Gly Gly Pro Leu Ser Pro Gly Gly Lys Ser Ala
1 5 10 15

Ala Arg Ala Ala Ser Gly Phe Phe Ala Pro Ala Gly Pro Arg Gly Ala
20 25 30

Gly Arg Gly Pro Pro Pro Cys Leu Arg Gln Asn Phe Tyr Asn Pro Tyr
35 40 45

Leu Ala Pro Val Gly Thr Gln Gln Lys Pro Thr Gly Pro Thr Gln Arg
50 55 60

His Thr Tyr Tyr Ser Glu Cys Asp Glu Phe Arg Phe Ile Ala Pro Arg
65 70 75 80

Val Leu Asp Glu Asp Ala Pro Pro Glu Lys Arg Ala Gly Val His Asp
85 90 95

Gly His Leu Lys Arg Ala Pro Lys Val Tyr Cys Gly Gly Asp Glu Arg
100 105 110

Asp Val Leu Arg Val Gly Ser Gly Gly Phe Trp Pro Arg Arg Ser Arg
115 120 125

Leu Trp Gly Gly Val Asp His Ala Pro Ala Gly Phe Asn Pro Thr Val
130 135 140

Thr Val Phe His Val Tyr Asp Ile Leu Glu Asn Val Glu His Ala Tyr
145 150 155 160

Gly Met Arg Ala Ala Gln Phe His Ala Arg Phe Met Asp Ala Ile Thr
165 170 175

Pro Thr Gly Thr Val Ile Thr Leu Leu Gly Leu Thr Pro Glu Gly His

| 180 | 185 | 190 |
|---|-----|-----|
| Arg Val Ala Val His Val Tyr Gly Thr Arg Gln Tyr Phe Tyr Met Asn | | |
| 195 | 200 | 205 |
| Lys Glu Glu Val Asp Arg His Leu Gln Cys Arg Ala Pro Arg Asp Leu | | |
| 210 | 215 | 220 |
| Cys Glu Arg Met Ala Ala Ala Leu Arg Glu Ser Pro Gly Ala Ser Phe | | |
| 225 | 230 | 235 |
| Arg Gly Ile Ser Ala Asp His Phe Glu Ala Glu Val Val Glu Arg Thr | | |
| 245 | 250 | 255 |
| Asp Val Tyr Tyr Tyr Glu Thr Arg Pro Ala Leu Phe Tyr Arg Val Tyr | | |
| 260 | 265 | 270 |
| Val Arg Ser Gly Arg Val Leu Ser Tyr Leu Cys Asp Asn Phe Cys Pro | | |
| 275 | 280 | 285 |
| Ala Ile Lys Lys Tyr Glu Gly Val Asp Ala Thr Thr Arg Phe Ile | | |
| 290 | 295 | 300 |
| Leu Asp Asn Pro Gly Phe Val Thr Phe Gly Trp Tyr Arg Leu Lys Pro | | |
| 305 | 310 | 315 |
| Gly Arg Asn Asn Thr Leu Ala Gln Pro Arg Ala Pro Met Ala Phe Gly | | |
| 325 | 330 | 335 |
| Thr Ser Ser Asp Val Glu Phe Asn Cys Thr Ala Asp Asn Leu Ala Ile | | |
| 340 | 345 | 350 |
| Glu Gly Gly Met Ser Asp Leu Pro Ala Tyr Lys Leu Met Cys Phe Asp | | |
| 355 | 360 | 365 |
| Ile Glu Cys Lys Ala Gly Gly Glu Asp Glu Leu Ala Phe Pro Val Ala | | |
| 370 | 375 | 380 |
| Gly His Pro Glu Asp Leu Val Ile Gln Ile Ser Cys Leu Leu Tyr Asp | | |
| 385 | 390 | 395 |
| 400 | | |
| Leu Ser Thr Thr Ala Leu Glu His Val Leu Leu Phe Ser Leu Gly Ser | | |
| 405 | 410 | 415 |
| Cys Asp Leu Pro Glu Ser His Leu Asn Glu Leu Ala Ala Arg Gly Leu | | |
| 420 | 425 | 430 |
| Pro Thr Pro Val Val Leu Glu Phe Asp Ser Glu Phe Glu Met Leu Leu | | |
| 435 | 440 | 445 |
| Ala Phe Met Thr Leu Val Lys Gln Tyr Gly Pro Glu Phe Val Thr Gly | | |
| 450 | 455 | 460 |
| Tyr Asn Ile Ile Asn Phe Asp Trp Pro Phe Leu Leu Ala Lys Leu Thr | | |
| 465 | 470 | 475 |
| 480 | | |
| Asp Ile Tyr Lys Val Pro Leu Asp Gly Tyr Gly Arg Met Asn Gly Arg | | |
| 485 | 490 | 495 |
| Gly Val Phe Arg Val Trp Asp Ile Gly Gln Ser His Phe Gln Lys Arg | | |
| 500 | 505 | 510 |

Ser Lys Ile Lys Val Asn Gly Met Val Asn Ile Asp Met Tyr Gly Ile
 515 520 525
 Ile Thr Asp Lys Ile Lys Leu Ser Ser Tyr Lys Leu Asn Ala Val Ala
 530 535 540
 Glu Ala Val Leu Lys Asp Lys Lys Asp Leu Ser Tyr Arg Asp Ile
 545 550 555 560
 Pro Ala Tyr Tyr Ala Ala Gly Pro Ala Gln Arg Gly Val Ile Gly Glu
 565 570 575
 Tyr Cys Ile Gln Asp Ser Leu Leu Val Gly Gln Leu Phe Phe Lys Phe
 580 585 590
 Leu Pro His Leu Glu Leu Ser Ala Val Ala Arg Leu Ala Gly Ile Asn
 595 600 605
 Ile Thr Arg Thr Ile Tyr Asp Gly Gln Gln Ile Arg Val Phe Thr Cys
 610 615 620
 Leu Leu Arg Leu Ala Asp Gln Lys Gly Phe Ile Leu Pro Asp Thr Gln
 625 630 635 640
 Gly Arg Phe Arg Gly Ala Gly Glu Ala Pro Lys Arg Pro Ala Ala
 645 650 655
 Ala Arg Glu Asp Glu Glu Arg Pro Glu Glu Glu Gly Glu Asp Glu Asp
 660 665 670
 Glu Arg Glu Glu Gly Gly Glu Arg Glu Pro Glu Gly Ala Arg Glu
 675 680 685
 Thr Ala Gly Arg His Val Gly Tyr Gln Gly Ala Arg Val Leu Asp Pro
 690 695 700
 Ile Ser Gly Phe His Val Asn Pro Val Val Val Phe Asp Phe Ala Ser
 705 710 715 720
 Leu Tyr Pro Ser Ile Ile Gln Ala His Asn Leu Cys Phe Ser Thr Leu
 725 730 735
 Ser Leu Arg Ala Asp Ala Val Ala His Leu Glu Ala Gly Lys Asp Tyr
 740 745 750
 Leu Glu Ile Glu Val Gly Arg Arg Leu Phe Phe Val Lys Ala His
 755 760 765
 Val Arg Glu Ser Leu Leu Ser Ile Leu Leu Arg Asp Trp Leu Ala Met
 770 775 780
 Arg Lys Gln Ile Arg Ser Arg Ile Pro Gln Ser Ser Pro Glu Glu Ala
 785 790 795 800
 Val Leu Leu Asp Lys Gln Gln Ala Ala Ile Lys Val Val Cys Asn Ser
 805 810 815
 Val Tyr Gly Phe Thr Gly Val Gln His Gly Leu Leu Pro Cys Leu His
 820 825 830
 Val Ala Ala Thr Val Thr Ile Gly Arg Glu Met Leu Leu Ala Thr
 835 840 845

Arg Glu Tyr Val His Ala Arg Trp Ala Ala Phe Glu Gln Leu Leu Ala
 850 855 860
 Asp Phe Pro Glu Ala Ala Asp Met Arg Ala Pro Gly Pro Tyr Ser Met
 865 870 875 880
 Arg Ile Ile Tyr Gly Asp Thr Asp Ser Ile Phe Val Leu Cys Arg Gly
 885 890 895
 Leu Thr Ala Ala Gly Leu Thr Ala Met Gly Asp Lys Met Ala Ser His
 900 905 910
 Ile Ser Arg Ala Leu Phe Leu Pro Pro Ile Lys Leu Glu Cys Glu Lys
 915 920 925
 Thr Phe Thr Lys Leu Leu Ile Ala Lys Lys Tyr Ile Gly Val
 930 935 940
 Ile Tyr Gly Gly Lys Met Leu Ile Lys Gly Val Asp Leu Val Arg Lys
 945 950 955 960
 Asn Asn Cys Ala Phe Ile Asn Arg Thr Ser Arg Ala Leu Val Asp Leu
 965 970 975
 Leu Phe Tyr Asp Asp Thr Val Ser Gly Ala Ala Ala Leu Ala Glu
 980 985 990
 Arg Pro Ala Glu Glu Trp Leu Ala Arg Pro Leu Pro Glu Gly Leu Gln
 995 1000 1005
 Ala Phe Gly Ala Val Leu Val Asp Ala His Arg Arg Ile Thr Asp
 1010 1015 1020
 Pro Glu Arg Asp Ile Gln Asp Phe Val Leu Thr Ala Glu Leu Ser
 1025 1030 1035
 Arg His Pro Arg Ala Tyr Thr Asn Lys Arg Leu Ala His Leu Thr
 1040 1045 1050
 Val Tyr Tyr Lys Leu Met Ala Arg Arg Ala Gln Val Pro Ser Ile
 1055 1060 1065
 Lys Asp Arg Ile Pro Tyr Val Ile Val Ala Gln Thr Arg Glu Val
 1070 1075 1080
 Glu Glu Thr Val Ala Arg Leu Ala Ala Leu Arg Glu Leu Asp Ala
 1085 1090 1095
 Ala Ala Pro Gly Asp Glu Pro Ala Pro Pro Ala Ala Leu Pro Ser
 1100 1105 1110
 Pro Ala Lys Arg Pro Arg Glu Thr Pro Ser Pro Ala Asp Pro Pro
 1115 1120 1125
 Gly Gly Ala Ser Lys Pro Arg Lys Leu Leu Val Ser Glu Leu Ala
 1130 1135 1140
 Glu Asp Pro Ala Tyr Ala Ile Ala His Gly Val Ala Leu Asn Thr
 1145 1150 1155
 Asp Tyr Tyr Phe Ser His Leu Leu Gly Ala Ala Cys Val Thr Phe

| | | | |
|---|---------------------|-------------|-----|
| 1160 | 1165 | 1170 | |
| Lys Ala Leu Phe Gly Asn Asn | Ala Lys Ile Thr Glu | Ser Leu Leu | |
| 1175 | 1180 | 1185 | |
| Lys Arg Phe Ile Pro Glu Val | Trp His Pro Pro Asp | Asp Val Thr | |
| 1190 | 1195 | 1200 | |
| Ala Arg Leu Arg Ala Ala Gly | Phe Gly Ala Val Gly | Ala Gly Ala | |
| 1205 | 1210 | 1215 | |
| Thr Ala Glu Glu Thr Arg Arg | Met Leu His Arg Ala | Phe Asp Thr | |
| 1220 | 1225 | 1230 | |
| Leu Ala | | | |
| 1235 | | | |
| <210> 18 | | | |
| <211> 1235 | | | |
| <212> PRT | | | |
| <213> herpes simplex | | | |
| <400> 18 | | | |
| Met Phe Ser Gly Gly Gly Pro Leu Ser Pro Gly Gly Lys Ser Ala | | | |
| 1 | 5 | 10 | 15 |
| Ala Arg Ala Ala Ser Gly Phe Phe Ala Pro Ala Gly Pro Arg Gly Ala | | | |
| 20 | 25 | 30 | |
| Gly Arg Gly Pro Pro Pro Cys Leu Arg Gln Asn Phe Tyr Asn Pro Tyr | | | |
| 35 | 40 | 45 | |
| Leu Ala Pro Val Gly Thr Gln Gln Lys Pro Thr Gly Pro Thr Gln Arg | | | |
| 50 | 55 | 60 | |
| His Thr Tyr Tyr Ser Glu Cys Asp Glu Phe Arg Phe Ile Ala Pro Arg | | | |
| 65 | 70 | 75 | 80 |
| Val Leu Asp Glu Asp Ala Pro Pro Glu Lys Arg Ala Gly Val His Asp | | | |
| 85 | 90 | 95 | |
| Gly His Leu Lys Arg Ala Pro Lys Val Tyr Cys Gly Gly Asp Glu Arg | | | |
| 100 | 105 | 110 | |
| Asp Val Leu Arg Val Gly Ser Gly Gly Phe Trp Pro Arg Arg Ser Arg | | | |
| 115 | 120 | 125 | |
| Leu Trp Gly Gly Val Asp His Ala Pro Ala Gly Phe Asn Pro Thr Val | | | |
| 130 | 135 | 140 | |
| Thr Val Phe His Val Tyr Asp Ile Leu Glu Asn Val Glu His Ala Tyr | | | |
| 145 | 150 | 155 | 160 |
| Gly Met Arg Ala Ala Gln Phe His Ala Arg Phe Met Asp Ala Ile Thr | | | |
| 165 | 170 | 175 | |
| Pro Thr Gly Thr Val Ile Thr Leu Leu Gly Leu Thr Pro Glu Gly His | | | |
| 180 | 185 | 190 | |
| Arg Val Ala Val His Val Tyr Gly Thr Arg Gln Tyr Phe Tyr Met Asn | | | |
| 195 | 200 | 205 | |

Lys Glu Glu Val Asp Arg His Leu Gln Cys Arg Ala Pro Arg Asp Leu
 210 215 220

Cys Glu Arg Met Ala Ala Ala Leu Arg Glu Ser Pro Gly Ala Ser Phe
 225 230 235 240

Arg Gly Ile Ser Ala Asp His Phe Glu Ala Glu Val Val Glu Arg Thr
 245 250 255

Asp Val Tyr Tyr Tyr Glu Thr Arg Pro Ala Leu Phe Tyr Arg Val Tyr
 260 265 270

Val Arg Ser Gly Arg Val Leu Ser Tyr Leu Cys Asp Asn Phe Cys Pro
 275 280 285

Ala Ile Lys Lys Tyr Glu Gly Gly Val Asp Ala Thr Thr Arg Phe Ile
 290 295 300

Leu Asp Asn Pro Gly Phe Val Thr Phe Gly Trp Tyr Arg Leu Lys Pro
 305 310 315 320

Gly Arg Asn Asn Thr Leu Ala Gln Pro Arg Ala Pro Met Ala Phe Gly
 325 330 335

Thr Ser Ser Asp Val Glu Phe Asn Cys Thr Ala Asp Asn Leu Ala Ile
 340 345 350

Glu Gly Gly Met Ser Asp Leu Pro Ala Tyr Lys Leu Met Cys Phe Asp
 355 360 365

Ile Glu Cys Lys Ala Gly Gly Glu Asp Glu Leu Ala Phe Pro Val Ala
 370 375 380

Gly His Pro Glu Asp Leu Val Ile Gln Ile Ser Cys Leu Leu Tyr Asp
 385 390 395 400

Leu Ser Thr Thr Ala Leu Glu His Val Leu Leu Phe Ser Leu Gly Ser
 405 410 415

Cys Asp Leu Pro Glu Ser His Leu Asn Glu Leu Ala Ala Arg Gly Leu
 420 425 430

Pro Thr Pro Val Val Leu Glu Phe Asp Ser Glu Phe Glu Met Leu Leu
 435 440 445

Ala Phe Met Thr Leu Val Lys Gln Tyr Gly Pro Glu Phe Val Thr Gly
 450 455 460

Tyr Asn Ile Ile Asn Phe Asp Trp Pro Phe Leu Leu Ala Lys Leu Thr
 465 470 475 480

Asp Ile Tyr Lys Val Pro Leu Asp Gly Tyr Gly Arg Met Asn Gly Arg
 485 490 495

Gly Val Phe Arg Val Trp Asp Ile Gly Gln Ser His Phe Gln Lys Arg
 500 505 510

Ser Lys Ile Lys Val Asn Gly Met Val Asn Ile Asp Met Tyr Gly Ile
 515 520 525

Ile Thr Asp Lys Ile Lys Leu Ser Ser Tyr Lys Leu Asn Ala Val Ala

| | | | |
|---|-----|-----|-----|
| 530 | 535 | 540 | |
| Glu Ala Val Leu Lys Asp Lys Lys Lys Asp Leu Ser Tyr Arg Asp Ile | | | |
| 545 | 550 | 555 | 560 |
| Pro Thr Tyr Tyr Ala Ala Gly Pro Ala Gln Arg Gly Val Ile Gly Glu | | | |
| 565 | 570 | 575 | |
| Tyr Cys Ile Gln Asp Ser Leu Leu Val Gly Gln Leu Phe Phe Lys Phe | | | |
| 580 | 585 | 590 | |
| Leu Pro His Leu Glu Leu Ser Ala Val Ala Arg Leu Ala Gly Ile Asn | | | |
| 595 | 600 | 605 | |
| Ile Thr Arg Thr Ile Tyr Asp Gly Gln Gln Ile Arg Val Phe Thr Cys | | | |
| 610 | 615 | 620 | |
| Leu Leu Arg Leu Ala Asp Gln Lys Gly Phe Ile Leu Pro Asp Thr Gln | | | |
| 625 | 630 | 635 | 640 |
| Gly Arg Phe Arg Gly Ala Gly Gly Glu Ala Pro Lys Arg Pro Ala Ala | | | |
| 645 | 650 | 655 | |
| Ala Arg Glu Asp Glu Glu Arg Pro Glu Glu Glu Gly Glu Asp Glu Asn | | | |
| 660 | 665 | 670 | |
| Glu Arg Glu Glu Gly Gly Glu Arg Glu Pro Glu Gly Ala Arg Glu | | | |
| 675 | 680 | 685 | |
| Thr Ala Gly Arg His Val Gly Tyr Gln Gly Ala Arg Val Leu Asp Pro | | | |
| 690 | 695 | 700 | |
| Thr Ser Gly Phe His Val Asn Pro Val Val Val Phe Asp Phe Ala Ser | | | |
| 705 | 710 | 715 | 720 |
| Leu Tyr Pro Ser Ile Ile Gln Ala His Asn Leu Cys Phe Ser Thr Leu | | | |
| 725 | 730 | 735 | |
| Ser Leu Arg Ala Asp Ala Val Ala His Leu Glu Ala Gly Lys Asp Tyr | | | |
| 740 | 745 | 750 | |
| Leu Glu Ile Glu Val Gly Gly Arg Arg Leu Phe Phe Val Lys Ala His | | | |
| 755 | 760 | 765 | |
| Val Arg Glu Ser Leu Leu Ser Ile Leu Leu Arg Asp Trp Leu Ala Met | | | |
| 770 | 775 | 780 | |
| Arg Lys Gln Ile Arg Ser Arg Ile Pro Gln Ser Ser Pro Glu Glu Ala | | | |
| 785 | 790 | 795 | 800 |
| Val Leu Leu Asp Lys Gln Gln Ala Ala Ile Lys Val Val Cys Asn Ser | | | |
| 805 | 810 | 815 | |
| Val Tyr Gly Phe Thr Gly Val Gln His Gly Leu Leu Pro Cys Leu His | | | |
| 820 | 825 | 830 | |
| Val Ala Ala Thr Val Thr Ile Gly Arg Glu Met Leu Leu Ala Thr | | | |
| 835 | 840 | 845 | |
| Arg Glu Tyr Val His Ala Arg Trp Ala Ala Phe Glu Gln Leu Leu Ala | | | |
| 850 | 855 | 860 | |

Asp Phe Pro Glu Ala Ala Asp Met Arg Ala Pro Gly Pro Tyr Ser Met
 865 870 875 880
 Arg Ile Ile Tyr Gly Asp Thr Asp Ser Ile Phe Val Leu Cys Arg Gly
 885 890 895
 Leu Thr Ala Ala Gly Leu Thr Ala Val Gly Asp Lys Met Ala Ser His
 900 905 910
 Ile Ser Arg Ala Leu Phe Leu Pro Pro Ile Lys Leu Glu Cys Glu Lys
 915 920 925
 Thr Phe Thr Lys Leu Leu Ile Ala Lys Lys Lys Tyr Ile Gly Val
 930 935 940
 Ile Tyr Gly Gly Lys Met Leu Ile Lys Gly Val Asp Leu Val Arg Lys
 945 950 955 960
 Asn Asn Cys Ala Phe Ile Asn Arg Thr Ser Arg Ala Leu Val Asp Leu
 965 970 975
 Leu Phe Tyr Asp Asp Thr Val Ser Gly Ala Ala Ala Leu Ala Glu
 980 985 990
 Arg Pro Ala Glu Glu Trp Leu Ala Arg Pro Leu Pro Glu Gly Leu Gln
 995 1000 1005
 Ala Phe Gly Ala Val Leu Val Asp Ala His Arg Arg Ile Thr Asp
 1010 1015 1020
 Pro Glu Arg Asp Ile Gln Asp Phe Val Leu Thr Ala Glu Leu Ser
 1025 1030 1035
 Arg His Pro Arg Ala Tyr Thr Asn Lys Arg Leu Ala His Leu Thr
 1040 1045 1050
 Val Tyr Tyr Lys Leu Met Ala Arg Arg Ala Gln Val Pro Ser Ile
 1055 1060 1065
 Lys Asp Arg Ile Pro Tyr Val Ile Val Ala Gln Thr Arg Glu Val
 1070 1075 1080
 Glu Glu Thr Val Ala Arg Leu Ala Ala Leu Arg Glu Leu Asp Ala
 1085 1090 1095
 Ala Ala Pro Gly Asp Glu Pro Ala Pro Pro Ala Ala Leu Pro Ser
 1100 1105 1110
 Pro Ala Lys Arg Pro Arg Glu Thr Pro Ser Pro Ala Asp Pro Pro
 1115 1120 1125
 Gly Gly Ala Ser Lys Pro Arg Lys Leu Leu Val Ser Glu Leu Ala
 1130 1135 1140
 Glu Asp Pro Ala Tyr Ala Ile Ala His Gly Val Ala Leu Asn Thr
 1145 1150 1155
 Asp Tyr Tyr Phe Ser His Leu Leu Gly Ala Ala Cys Val Thr Phe
 1160 1165 1170
 Lys Ala Leu Phe Gly Asn Asn Ala Lys Ile Thr Glu Ser Leu Leu
 1175 1180 1185

Lys Arg Phe Ile Pro Glu Val Trp His Pro Pro Asp Asp Val Ala
 1190 1195 1200
 Ala Arg Leu Arg Thr Ala Gly Phe Gly Ala Val Gly Ala Gly Ala
 1205 1210 1215
 Thr Ala Glu Glu Thr Arg Arg Met Leu His Arg Ala Phe Asp Thr
 1220 1225 1230
 Leu Ala
 1235
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 <211> 1235
 <212> PRT
 <213> herpes simplex
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 Met Phe Ser Gly Gly Gly Pro Leu Ser Pro Gly Gly Lys Ser Ala
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 Ala Arg Ala Ala Ser Gly Phe Phe Ala Pro Ala Gly Pro Arg Gly Ala
 20 25 30
 Gly Arg Gly Pro Pro Pro Cys Leu Arg Gln Asn Phe Tyr Asn Pro Tyr
 35 40 45
 Leu Ala Pro Val Gly Thr Gln Gln Lys Pro Thr Gly Pro Thr Gln Arg
 50 55 60
 His Thr Tyr Tyr Ser Glu Cys Asp Glu Phe Arg Phe Ile Ala Pro Arg
 65 70 75 80
 Val Leu Asp Glu Asp Ala Pro Pro Glu Lys Arg Ala Gly Val His Asp
 85 90 95
 Gly His Leu Lys Arg Ala Pro Lys Val Tyr Cys Gly Gly Asp Glu Arg
 100 105 110
 Asp Val Leu Arg Val Gly Ser Gly Gly Phe Trp Pro Arg Arg Ser Arg
 115 120 125
 Leu Trp Gly Gly Val Asp His Ala Pro Ala Gly Phe Asn Pro Thr Val
 130 135 140
 Thr Val Phe His Val Tyr Asp Ile Leu Glu Asn Val Glu His Ala Tyr
 145 150 155 160
 Gly Met Arg Ala Ala Gln Phe His Ala Arg Phe Met Asp Ala Ile Thr
 165 170 175
 Pro Thr Gly Thr Val Ile Thr Leu Leu Gly Leu Thr Pro Glu Gly His
 180 185 190
 Arg Val Ala Val His Val Tyr Gly Thr Arg Gln Tyr Phe Tyr Met Asn
 195 200 205
 Lys Glu Glu Val Asp Arg His Leu Gln Cys Arg Ala Pro Arg Asp Leu
 210 215 220

Cys Glu Arg Met Ala Ala Ala Leu Arg Glu Ser Pro Gly Ala Ser Phe
 225 230 235 240

Arg Gly Ile Ser Ala Asp His Phe Glu Ala Glu Val Val Glu Arg Thr
 245 250 255

Asp Val Tyr Tyr Tyr Glu Thr Arg Pro Ala Leu Phe Tyr Arg Val Tyr
 260 265 270

Val Arg Ser Gly Arg Val Leu Ser Tyr Leu Cys Asp Asn Phe Cys Pro
 275 280 285

Ala Ile Lys Lys Tyr Glu Gly Val Asp Ala Thr Thr Arg Phe Ile
 290 295 300

Leu Asp Asn Pro Gly Phe Val Thr Phe Gly Trp Tyr Arg Leu Lys Pro
 305 310 315 320

Gly Arg Asn Asn Thr Leu Ala Gln Pro Arg Ala Pro Met Ala Phe Gly
 325 330 335

Thr Ser Ser Asp Val Glu Phe Asn Cys Thr Ala Asp Asn Leu Ala Ile
 340 345 350

Glu Gly Gly Met Ser Asp Leu Pro Ala Tyr Lys Leu Met Cys Phe Asp
 355 360 365

Ile Glu Cys Lys Ala Gly Glu Asp Glu Leu Ala Phe Pro Val Ala
 370 375 380

Gly His Pro Glu Asp Leu Val Ile Gln Ile Ser Cys Leu Leu Tyr Asp
 385 390 395 400

Leu Ser Thr Thr Ala Leu Glu His Val Leu Leu Phe Ser Leu Gly Ser
 405 410 415

Cys Asp Leu Pro Glu Ser His Leu Asn Glu Leu Ala Ala Arg Gly Leu
 420 425 430

Pro Thr Pro Val Val Leu Glu Phe Asp Ser Glu Phe Glu Met Leu Leu
 435 440 445

Ala Phe Met Thr Leu Val Lys Gln Tyr Gly Pro Glu Phe Val Thr Gly
 450 455 460

Tyr Asn Ile Ile Asn Phe Asp Trp Pro Phe Leu Leu Ala Lys Leu Thr
 465 470 475 480

Asp Ile Tyr Lys Val Pro Leu Asp Gly Tyr Gly Arg Met Asn Gly Arg
 485 490 495

Gly Val Phe Arg Val Trp Asp Ile Gly Gln Ser His Phe Gln Lys Arg
 500 505 510

Ser Lys Ile Lys Val Asn Gly Met Val Asn Ile Asp Met Tyr Gly Ile
 515 520 525

Ile Thr Asp Lys Ile Lys Leu Ser Ser Tyr Lys Leu Asn Ala Val Ala
 530 535 540

Glu Ala Val Leu Lys Asp Lys Lys Lys Asp Leu Ser Tyr Arg Asp Ile
 545 550 555 560

Pro Ala Tyr Tyr Ala Ala Gly Pro Ala Gln Arg Gly Val Ile Gly Glu
 565 570 575
 Tyr Cys Ile Gln Asp Ser Leu Leu Val Gly Gln Leu Phe Phe Lys Phe
 580 585 590
 Leu Pro His Leu Glu Leu Ser Ala Val Ala Arg Leu Ala Gly Ile Asn
 595 600 605
 Ile Thr Arg Thr Ile Tyr Asp Gly Gln Gln Ile Arg Val Phe Thr Cys
 610 615 620
 Leu Leu Arg Leu Ala Asp Gln Lys Gly Phe Ile Leu Pro Asp Thr Gln
 625 630 635 640
 Gly Arg Phe Arg Gly Gly Gly Glu Ala Pro Lys Arg Pro Ala Ala
 645 650 655
 Ala Arg Glu Asp Glu Glu Arg Pro Glu Glu Glu Gly Glu Asp Glu Asp
 660 665 670
 Glu Arg Glu Glu Gly Gly Glu Arg Glu Pro Glu Gly Ala Arg Glu
 675 680 685
 Thr Ala Gly Arg His Val Gly Tyr Gln Gly Ala Arg Val Leu Asp Pro
 690 695 700
 Thr Ser Gly Phe His Val Asn Pro Val Val Val Phe Asp Phe Ala Ser
 705 710 715 720
 Leu Tyr Pro Ser Ile Ile Gln Ala His Asn Leu Cys Phe Ser Thr Leu
 725 730 735
 Ser Leu Arg Ala Asp Ala Val Ala His Leu Glu Ala Gly Lys Asp Tyr
 740 745 750
 Leu Glu Ile Glu Val Gly Gly Arg Arg Leu Phe Phe Val Lys Ala His
 755 760 765
 Val Arg Glu Ser Leu Leu Ser Ile Leu Leu Arg Asp Trp Leu Ala Met
 770 775 780
 Arg Lys Gln Ile Arg Ser Arg Ile Pro Gln Ser Ser Pro Glu Glu Ala
 785 790 795 800
 Val Leu Leu Asp Lys Gln Gln Ala Ala Ile Lys Val Val Cys Asn Ser
 805 810 815
 Val Tyr Gly Phe Thr Gly Val Gln His Gly Leu Leu Pro Cys Leu His
 820 825 830
 Val Ala Ala Thr Val Thr Ile Gly Arg Glu Met Leu Leu Ala Thr
 835 840 845
 Arg Glu Tyr Val His Ala Arg Trp Ala Ala Phe Glu Gln Leu Leu Ala
 850 855 860
 Asp Phe Pro Glu Ala Ala Asp Met Arg Ala Pro Gly Pro Tyr Ser Met
 865 870 875 880
 Arg Ile Ile Tyr Gly Asp Thr Asp Ser Ile Phe Val Leu Cys Arg Gly

| 885 | 890 | 895 |
|---|------|------|
| Leu Thr Ala Ala Gly Leu Thr Ala Val Gly Asp Lys Met Ala Ser His | | |
| 900 | 905 | 910 |
| Ile Ser Arg Ala Leu Phe Leu Ser Pro Ile Lys Leu Glu Cys Glu Lys | | |
| 915 | 920 | 925 |
| Thr Phe Thr Lys Leu Leu Ile Ala Lys Lys Tyr Ile Gly Val | | |
| 930 | 935 | 940 |
| Ile Tyr Gly Gly Lys Met Leu Ile Lys Gly Val Asp Leu Val Arg Lys | | |
| 945 | 950 | 955 |
| Asn Asn Cys Ala Phe Ile Asn Arg Thr Ser Arg Ala Leu Val Asp Leu | | |
| 965 | 970 | 975 |
| Leu Phe Tyr Asp Asp Thr Val Ser Gly Ala Ala Ala Ala Leu Ala Glu | | |
| 980 | 985 | 990 |
| Arg Pro Ala Glu Glu Trp Leu Ala Arg Pro Leu Pro Glu Gly Leu Gln | | |
| 995 | 1000 | 1005 |
| Ala Phe Gly Ala Val Leu Val Asp Ala His Arg Arg Ile Thr Asp | | |
| 1010 | 1015 | 1020 |
| Pro Glu Arg Asp Ile Gln Asp Phe Val Leu Thr Ala Glu Leu Ser | | |
| 1025 | 1030 | 1035 |
| Arg His Pro Arg Ala Tyr Thr Asn Lys Arg Leu Ala His Leu Thr | | |
| 1040 | 1045 | 1050 |
| Val Tyr Tyr Lys Leu Met Ala Arg Arg Ala Gln Val Pro Ser Ile | | |
| 1055 | 1060 | 1065 |
| Lys Asp Arg Ile Pro Tyr Val Ile Val Ala Gln Thr Arg Glu Val | | |
| 1070 | 1075 | 1080 |
| Glu Glu Thr Val Ala Arg Leu Ala Ala Leu Arg Glu Leu Asp Ala | | |
| 1085 | 1090 | 1095 |
| Ala Ala Pro Gly Asp Glu Pro Ala Pro Pro Ala Ala Leu Pro Ser | | |
| 1100 | 1105 | 1110 |
| Pro Ala Lys Arg Pro Arg Glu Thr Pro Leu His Ala Asp Pro Pro | | |
| 1115 | 1120 | 1125 |
| Gly Gly Ala Ser Lys Pro Arg Lys Leu Leu Val Ser Glu Leu Ala | | |
| 1130 | 1135 | 1140 |
| Glu Asp Pro Ala Tyr Ala Ile Ala His Gly Val Ala Leu Asn Thr | | |
| 1145 | 1150 | 1155 |
| Asp Tyr Tyr Phe Ser His Leu Leu Gly Ala Ala Cys Val Thr Phe | | |
| 1160 | 1165 | 1170 |
| Lys Ala Leu Phe Gly Asn Asn Ala Lys Ile Thr Glu Ser Leu Leu | | |
| 1175 | 1180 | 1185 |
| Lys Arg Phe Ile Pro Glu Val Trp His Pro Pro Asp Asp Val Ala | | |
| 1190 | 1195 | 1200 |

Ala Arg Leu Arg Ala Ala Gly Phe Gly Ala Val Gly Ala Gly Ala
1205 1210 1215

Thr Ala Glu Glu Thr Arg Arg Met Leu His Arg Ala Phe Asp Thr
1220 1225 1230

Leu Ala
1235